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The OIL AND GAS JOURNAL

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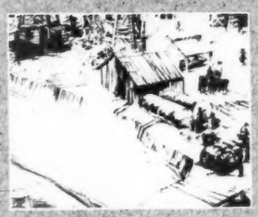

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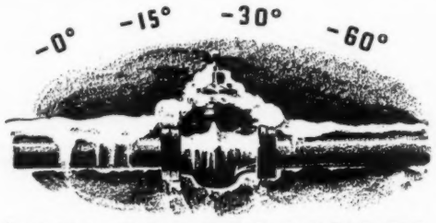

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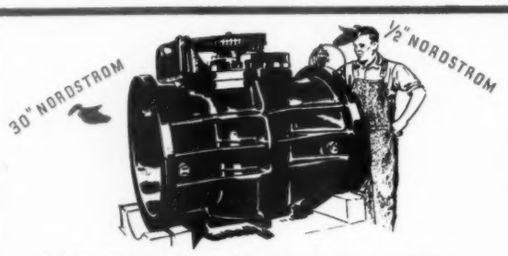

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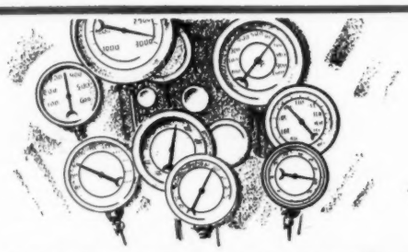

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OIL MAN'S CALENDAR

May

6-9—Memphis, Tenn., Natural Gas Department, A.G.A., Peabody Hotel.

8-11—Tulsa, Oil and Gas Power Division of A.S.M.E., Mayo Hotel.

14-16—Tulsa, American Petroleum Institute, fifth mid-year meeting, Mayo Hotel.

14-16—Wilmington, Del., American Institute of Chemical Engineers, semiannual meeting.

16-17—Roanoke, Va., Virginia Oil Men's Association and Virginia Oil Jobbers Association, annual meeting, Patrick Henry Hotel.

20-23—New York, National Association of Purchasing Agents, Oil Company Buyers Group Session, Waldorf-Astoria Hotel.

June

6—Los Angeles, Calif., California Natural Gasoline Association.

10-11—Fargo, N. Dak., Northwestern Petroleum Association, North Dakota Division.

19-21—Cincinnati, Ohio, American Society of Chemical Engineers.

20-21—State College, Pa., Pennsylvania Grade Crude Oil Association, annual meeting.

24-28—Detroit, Mich., American Society for Testing Materials, annual meeting, Book Cadillac Hotel.

August

(?)—American Petroleum Equipment Suppliers' Association, place to be named later.

19-24—San Francisco, Calif., American Chemical Society.

September

12-13—Louisville, Ky., Kentucky Petroleum Marketers Association.

18-20—Hot Springs, Ark., North American Gasoline Tax Conference.

18-20—Atlantic City, N. J., National Petroleum Association, annual meeting, Hotel Traymore.

November

4-5—Dallas, Tex., I.P.A.A., annual convention.

11-14—Los Angeles, Calif., American Petroleum Institute, sixteenth annual meeting, Biltmore Hotel.

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Strong Refined Oil Market Brings Gasoline and Crude Prices Near Ratio So Long Desired

By ANDREW M. ROWLEY

WITH all refined oil products in the Mid-Continent area stronger than they have been for months and gasoline prices in the Eastern territory higher and showing a continued tendency to advance still further, the industry has almost reached that balance between crude oil and gasoline prices which has been the goal for so long a time. Producers and refiners feel especially encouraged at this condition, coming as it does at the beginning of the main consuming season, because of the many times in the past when the price structures weakened at the beginning of the period of greatest demand.

Despite this strength in the general situation, however, a conference in Chicago early this week was called to consider the relationship between crude oil and gasoline prices as there still is some agitation that gasoline prices are still too low to maintain the average price of $1 per barrel for crude. A preponderance of sentiment throughout the industry is that present efforts to stabilize gasoline prices at a level which will permit profitable operation have been especially successful and should be continued so that both producers and refiners shall receive prices more in line with actual costs of production and manufacture and losses sustained over so long a period will no longer predominate.

Field developments of the past week showed clearly the increase in general drilling activity and gave a good indication of what the industry and business in general might expect as soon as oil companies are relieved of the uncertainty regarding legislation and the effect such proposed legislation might have on their operations. Results in Oklahoma were unusually encouraging to producers and further stimulated activity in that state which has been especially busy for so long.

In the Fitts Pool where operators had regarded the east side as the most favorable, the largest producer of the pool was completed as a one-location extension to the west side, Phillips Petroleum Company getting a well which made 1,144 barrels the first hour and maintained that flow. The Sinclair Prairie Oil Company seems to have opened a new Wilcox sand pool 12 miles south of Guthrie when its wildcat there filled up 1,700 feet of oil and made several flows of 36 gravity crude.

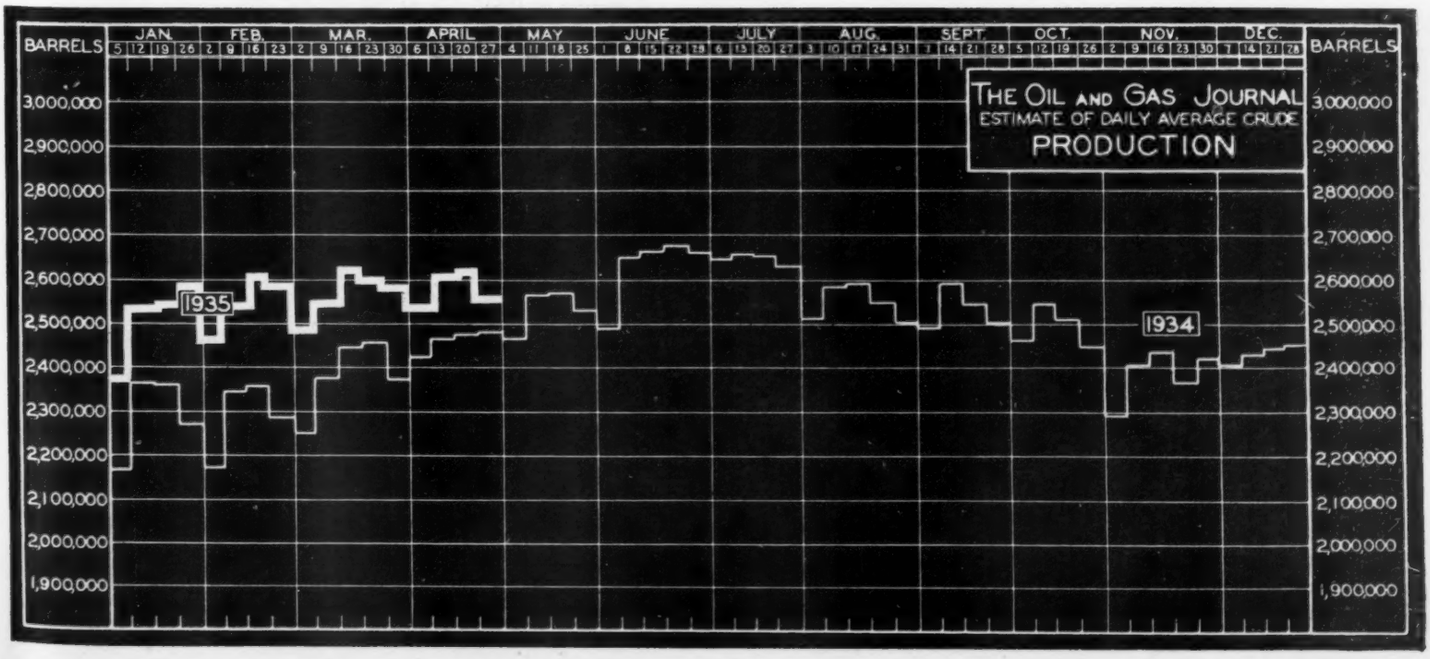
An unusually large number of wildcats were started in Kansas last week with 29 new operations and 9 wildcats. Developments in the Gulf Coast, New Mexico and Michigan resulted in an increase in the average number of new locations while the discovery of a new pool 10 miles east of Sinton, San Patricio County, Southwest Texas and the recompletion of a deep wildcat in Hidalgo County, which flowed 10 barrels an hour, intensified interest in that whole area.

Crude Oil Production in the United States

Estimated daily average production for the week ending April 27, a comparison with previous week and the Federal allowables follow:

		Federal allowable	
	April 27	April	April 20
Oklahoma—			
Oklahoma City	163,875	.....	176,325
Seminole-St. Louis	101,675	.....	102,450
Remainder of State	257,200	.....	258,350
Total Oklahoma	522,750	493,300	537,125
East Texas—			
Lathrop	159,432	.....	158,926
Kilgore	150,617	.....	153,325
Joiner	148,397	.....	155,278
Total East Texas	458,446	.....	467,529
West Texas	145,768	.....	145,536
North Central Texas	88,883	.....	90,624
Texas Panhandle	61,667	.....	54,349
East Central Texas	48,801	.....	50,065
Gulf Coast—Texas	181,580	.....	180,738
Southwest Texas	62,505	.....	60,834
Total State of Texas	1,047,650	1,021,000	1,049,675
Kansas	146,025	141,000	146,523
North Louisiana	22,890	.....	22,985
Gulf Coast—Louisiana	101,720	.....	100,038
Total Louisiana	124,610	111,000	123,023
Arkansas	30,225	30,700	30,205
Eastern Fields (except Michigan)	104,500	106,900	106,500
Michigan	40,903	32,700	39,023
Rocky Mountain area	89,390	97,400	103,330
California—			
Santa Fe Springs	34,600	.....	36,500
Long Beach	60,000	.....	68,000
Mountain View	10,250	.....	8,100
Elwood	9,450	.....	8,500
Kettleman Hills	48,000	.....	55,500
Remainder of State	295,950	.....	309,650
Total California	458,250	493,300	486,250
Total United States	2,564,303	2,527,300	2,621,654

Decrease 57,351 Bbls. Daily



The Bulletin Board

The Thomas Bill will be reported favorably by the Senate Committee on Mines and Mining but the petroleum industry has a chance to defeat the measure in the Senate if it acts quickly and informs senators of the true picture of what the bill means. There is less chance of the measure being approved by the House but even there it is necessary that intensive work be done to show congressmen such legislation is not necessary or desirable.

•

A Vigorous Battle must be waged by the entire petroleum industry against proposed Federal legislation which would regiment the business and doom it to a life of bondage under the shackles of a Washington bureaucracy, according to reports of conservative Washington observers.

•

The Texas Senate approved Senator Clint Small's bill to prevent use of sweet natural gas for other purposes than light and fuel and limiting carbon black manufacture to sour gas. The bill awaits agreement by the House.

•

The Proposed New N.R.A. was attacked by Judge C. B. Ames before the United States Chamber of Commerce. He condemned this proposed expansion of control by the government.

•

Polymerization of refinery gases will shortly become a major source of motor fuel of high octane rating if developments discussed before the American Chemical Society materialize. It was stated one process, developed to a commercial stage, can secure 1,000,000,000 gallons of motor fuel from the 300 billion feet of gas now produced from cracking operations in the United States.

•

A. P. I. Directors will meet in Chicago Friday for the purpose of formulating a declaration of principles demanding full freedom of the industry from Federal government control.

•

Natural Gasoline manufacturers are directing this important business into a more profitable position through consolidation of operations with more plants abandoned last year than were constructed, the result of such unitization being better plants from the standpoint of equipment and more modern and scientific methods employed with a better product.

•

Deeper Drilling in Pennsylvania is receiving serious consideration with discovery of oil and gas in the Oriskany of Kanawha County, W. Va. last year extending the area of interest. Northwestern Pennsylvania is regarded as the logical area in Pennsylvania next to attract exploration of the deep sands.

Hot Oil Production in East Texas last week was estimated at 27,000 barrels daily with indications the figure might increase, as refineries which had shut down temporarily were beginning to resume operations. On April 17 it was said only 16 refineries were running in the field and not one of these on hot oil, the first time such a condition was reported. Last week there were 29 plants operating, 11 of which were said to be running hot oil.

•

Gov. James V. Allred expressed confidence the pipe line bill providing for construction of a natural gas pipe line from the Texas Panhandle to Detroit, financed by the Federal government, will be approved before adjournment of the legislature.

•

More Money has been expended in getting crude oil production in the United States since the beginning of the petroleum industry than producers have received from the sale of the product, according to Wallace E. Pratt, who says it is essential that private initiative in the oil producing industry continue to operate freely and energetically, otherwise the effort to find needed new oil fields may be seriously checked.

•

California natural gasoline manufacturers have developed a standardized procedure for taking the Reid vapor pressure test and propose to make the method acceptable for use in the entire gasoline industry.

•

Alcoholic Caustic Solutions have been found to be superior sweetening reagents for cracked gasolines. Methanol is preferred as the solvent.

•

Construction Has Started on a 25,000-gallon natural gasoline plant in the Fitts Pool of Oklahoma. Owners have contracted to take the gas from 50 wells and expect to increase the number to 65 shortly. This is the largest item of gasoline plant construction in Oklahoma for more than a year.

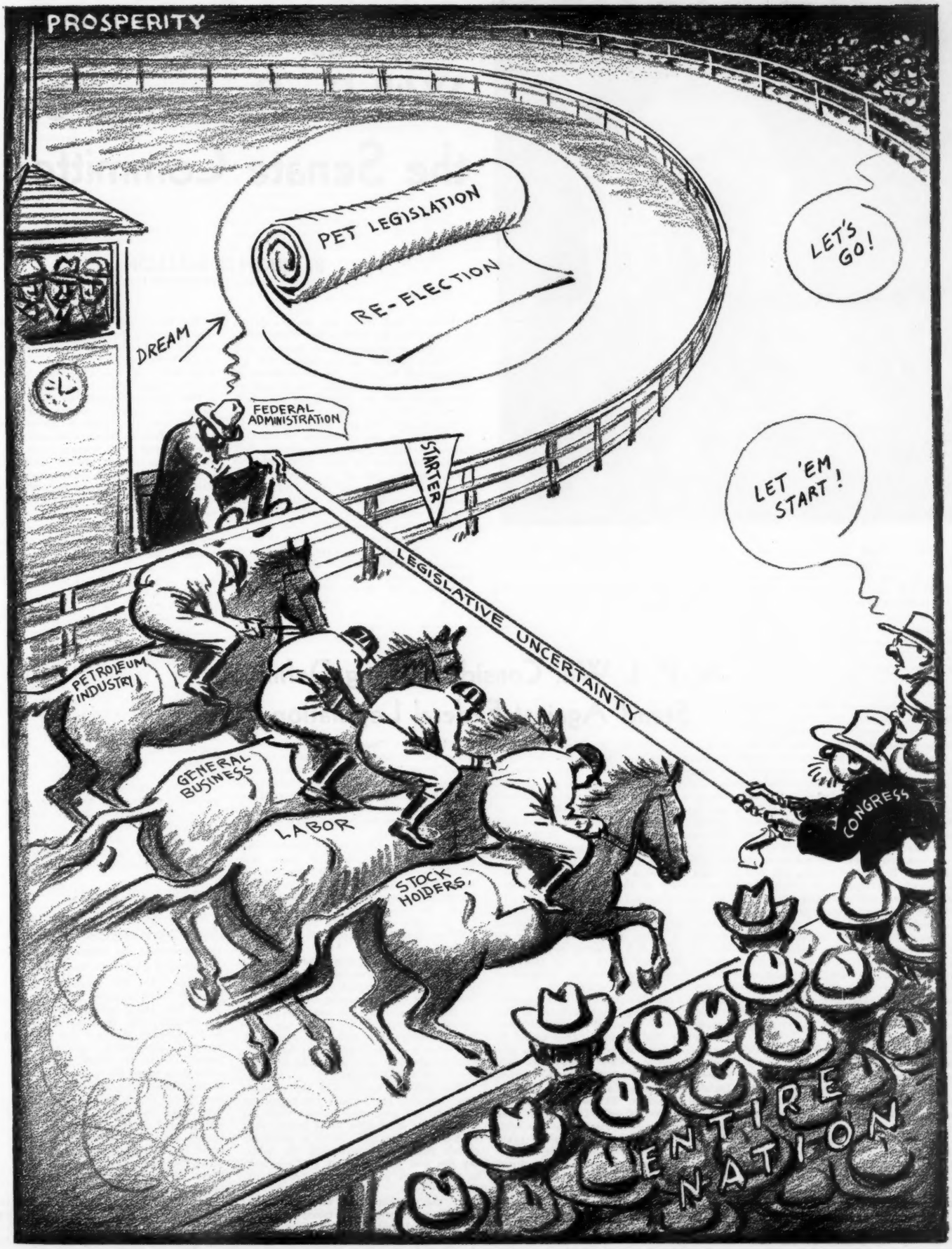
•

Pennsylvania Grade Crudes may be more economically refined through the use of selective solvents than oils containing substantial quantities of naphthenic compounds.

•

A 40,000-Gallon natural gasoline plant in East Texas maintains even operations due to a well designed gas gathering system and the scheduled production of the wells served by the plant.

Raise the Barrier



—Drawn exclusively for The Oil and Gas Journal

Thomas Control Bill Will Be Reported by the Senate Committee

By HUGH D. MALLON
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Apr. 30.—The subcommittee of the Senate Mines and Mining Committee today decided to report the Thomas oil control bill favorably to the full committee within the next few days. Some amendments to the bill were made by the subcommittee, headed by Senator Thomas of Utah, but the general tenor of the bill has not been changed.

If anything, the bill as reported gives more discretion to the Federal Petroleum Agency than the orginal bill did. As now written, the proposed law leaves to administrative interpretation practically all provisions relating to when the production control features may be put into effect.

In explaining the bill Senator Thomas of Utah said that there had been some disagreement among the members of the subcommittee as to the constitutionality of provisions of the bill which stated that the bill was based on the control of interstate commerce for the purposes of conservation. Instead of leaving this provision in, the declaration of policy now states that commerce will be regulated in the interests of the national defense and for the public welfare.

The senator said the prevention of waste was essential to the national defense, and the provisions of the bill are based on this premise. The subcommittee is attempting to make it impossible to fix prices under this law, it was explained, and the interstate compact is in their opinion the best vehicle to carry out this plan.

Before the petroleum board may set allocations for the states, and enforce such allocations under the act, Senator Thomas stated, it must be found, by the board, that interstate commerce is affected by the supply, in which case the board would have full authority to act. It should be noted, however, the bill does not specify in what manner interstate commerce should be affected in order to bring these powers into play, the mere finding that interstate commerce is affected being all that is necessary.

As it is generally conceded that interstate commerce is affected in one way or another by any supply at all, this provision is taken to give the board authority to act at any time they see fit, which will be all the time, if their past actions are to be taken into consideration.

The federal agency will be composed of five members, to be appointed by the President, and there are no standards, or qualifications set up for these members. The Secretary of the Interior will not be a member of the board, but the agency will be under the Department of the Interior, and as such the actions of the board will be subject to the veto power of the secretary.

The board will not be authorized to fix prices, or to determine reasonable prices, Senator Thomas explaining that it was proposed to keep temptation to boost the price out of the picture.

Senator Thomas said the board is supposed to function in the position of an umpire, whose sole purpose is to overcome waste, assure conservation, and administer the state compact. Provision is made for the President to have authority to suspend the operation of the compact at any time upon complaint, either by one or more of the states, or by the federal board.

The board will hold hearings on matters such as this, but will not have authority to settle the controversy, this power being vested in the President, who shall hand down his decision after receiving reports from the board.

This law is designed to make the industry a long-time paying investment, instead of the present get-rich-quick scheme, Senator Thomas stated, and the law is designed to remedy present conditions which have brought this about. If the laws had anticipated present conditions we wouldn't have had these troubles which make this law necessary, he said.

Commenting on the participation of the federal Government in the interstate compact, the senator said:

"If the states are happy and the industry is happy the Government will do nothing (in the way of carrying out the provisions of this bill) and if the states are sincere in their plea for interstate compacts then the federal Government must be a partner."

Notwithstanding this statement that the federal Government would do nothing, so long as the states and the industry were happy, the authority will be vested in the Government to, at any time, on the mere finding that interstate commerce is "affected," put into operation any or all the provisions of the bill, which includes the authority to allocate all the way down to individual fields, pools and wells the amount of crude oil, or its products, which may be shipped in commerce, and as was explained recently by proponents of the bill, the moving across the street of a barrel of oil is a movement affecting interstate commerce and subject to regulation under the terms of this act.

New NRA

A new National Industrial Recovery Act is being sponsored by Administration leaders in the Senate, and that body is expected to report favorably, at the insistence of the administration, the Wagner labor disputes bill. The House, which has under consideration the holding company bill, on which a report will be forthcoming within a few days, which report is expected to meet with the approval of the President, must devise a method to meet the expenses of the administration's program. The House Ways and Means Committee is expected to discover some method of taxation which is not painful to the people who vote, although President Roosevelt is alleged to be in favor of continuing the present so-called "nuisance taxes" among which are listed the Federal gasoline tax and the lubricating oil tax.

Senator Pat Harrison, administration wheel-horse in the Senate, and chairman of the Senate Finance Committee which is considering the extension of the National Industrial Recovery Act, has proposed several amendments to the bill in-

A. P. I. Will Consider Taking Definite Stand Against Federal Legislation

Directors of the American Petroleum Institute will meet at the Stevens Hotel, Chicago, at 10 o'clock Friday morning to consider and formulate a set of principles covering views of the membership on matters of vital importance to the entire industry at this time, including proposed federal legislation. It is understood the principles, if approved, will be embodied in a petition to Congress.

The proposed petition would place membership of the Institute, representing approximately 90 per cent of the investment in the petroleum industry, definitely on record as opposed to federal control of crude oil production, any extension of N.R.A. control over the industry and price fixing of any type. Utmost freedom from federal government control of the oil industry from the well to the filling station would be advocated.

Congress during the remainder of this session would be asked to do but three things for the industry. One would be approval of the state compact upon production control which already has been signed by five major producing states, Oklahoma, Texas, California, New Mexico and Colorado. The second would be continued control of oil imports. The third would be authorization of a special agency of the federal Government, probably the U. S. Bureau of Mines, to prepare at regular intervals figures upon consumptive demand in order that the various states might properly regulate and control production.

Enforcement of the Connally "hot oil" act, already approved by Congress, as an aid to state production control, also is urged in the tentative draft of the petition.

Otherwise, Congress should forget about the oil industry and assure it that there is no donger of further legislation in the near future. Fear of additional control and uncertainty of both congressional and executive action has retarded the recovery of the oil industry, the petition will assert.

Competition within the oil industry has always been vigorous and keen, and should be permitted to continue for the benefit of the consumer of gasoline, those sponsoring the petition will seek to explain. In the past this competition has led to better and cheaper products, and will continue to benefit the public if allowed to continue.

While the petition would not attack the NRA as it has operated over the past two years, it warns against any widening of the powers of government over industry in the extension of the recovery administration. Proposals to amend the present act before it is extended, now pending, show a decided tendency toward federal dictatorship and should be rejected, the petition will declare.

The petition would take the position that industry, particularly the petroleum industry, has progressed enough since the peak of the depression to no longer need emergency regulation. With a minimum of aid from the Government, the industry can now proceed on to full recovery, in the opinion of those who drafted the tentative copy.

At the present time, federal bureaucracy, coupled with uncertainty of future congressional and administration moves, is actually handicapping the recovery of the oil industry, the petition would insist.

troduced by him several days ago and which would greatly change the present Recovery Act if enacted.

The first amendment provides that the President "may" (instead of "is authorized to"), provide for the setting up of committees representing the opinion of the industry involved. If the President sees fit to recognize the continuation of trade or industry committees composed, in whole or in part, of representatives of industry, such committee shall not be designated by any such term as "code authority," which the proposal says indicates "the possession of governmental power or authority."

No powers vested in the President shall be delegated to any such committee, however, which means that any "code authority" set up under the provisions of this act would have only an advisory capacity. Under the present act, the Planning and Coordination Committee is supposed to recommend any amendments to the petroleum code, and although this practice has not always been adhered to, there is a question as to whether amendments made by the P.A.B. on its own volition are legal. Under the amendment suggested by Senator Harrison, the Planning and Coordination Committee would not be consulted, the legal staff of the P.A.B., composed largely of newly admitted members of the bar making all or any changes in policy which it deemed fit.

In other words, members of the industry, with experience to blaze the trail necessary in a venture into industrial socialism such as this, would not even necessarily be considered, their wishes being overriden by the fancies of almost any reformer who happened to obtain a position with the administrative agency set up to administer the code involved.

A second amendment couched in very legalistic language, but of doubtful constitutionality, provides that the antitrust laws shall not be abrogated in any respect by any codes of fair competition. This was previously prophesied as being the compromise between the forces led by Senators Borah and Nye and those senators following the administration dogmatically.

A direct shot is being made at oil, natural gas and coal, under the guise of this bill. Power is reserved in the government to control production, fix prices, and if need be, promulgate a code for the oil industry.

If this provision is contained in the draft of the law which is finally enacted by Congress the only way whereby the oil industry can possibly assure the promulgation of a code which is workable, and which will benefit the entire industry, is to come here for the re-writing of the code and fight it out. This statement has been made by several members of the industry. It is their opinion that, unless the industry unites to fight, drastic provisions which will adversely affect the entire industry will be included in the revised code. Instead of fighting with each other, as was the case when the original code was written, they say, why not get together, iron out the difficulties beforehand, and come to Washington with a united front? A vigorous and lusty offense is the only defense which will be available to the industry.

There is a possibility that the Recovery Act may not be extended for the full two years which the President has requested. Much opposition has developed, and there is a remote chance the act may be extended, as is, only for a period of eight or nine months in order to give Congress and the Supreme Court an opportunity to study the constitutional questions and the proper procedure if it is made a permanent part of the law, or even extended for a longer period than the nine months.

Holding Company Bill

Three subcommittees of the House Committee on Interstate and Foreign Commerce have been appointed, although their membership has not been divulged, to redraft the so-called utility holding company bill. One group will draft the provisions dealing with holding companies, another will be concerned with provisions governing the regulation of electric power, and the third with the regulation of the natural gas industry. These subcommittees will report back to the full committee when they have completed their work, at which time any differences between the subcommittees and the full committee will be ironed out and following which the bill will be reported to the House.

Indications are it will not be in anything like its present form but will be devoted almost entirely to regulation, and not abolition, of holding companies. What the provisions governing the regulation of the natural gas industry will be is not known, but Sam Rayburn, chairman of the committee, has stated he did not believe the provisions in the proposed bill, which would give to the Federal Trade Commission supervision of the regulation of the industry, were adequate or proper. It was his opinion, a separate organization should be set up to regulate the natural gas industry, if there was to be any regulation.

The Wagner Labor Disputes Bill is still quiescent, but with the descent upon Washington of as many leaders in the American Federation of Labor as are convening here now, there is no telling how long it will stay quiet. No report has been presented by either the Senate or the House Committee which is considering the bill.

Supreme Court Declines Wilshire Case Questions

WASHINGTON, D. C., Apr. 29.—The Supreme Court has refused to go into the merits of the two questions certified to the court by the Circuit Court of Appeals at Los Angeles in relation to the validity of the NRA and the petroleum code. Wilshire Oil Co., Bandini Petroleum Co., Commodore Petroleum Co., Wilshire Annex Oil Co. and Ambassador Petroleum Co. were involved.

The questions sent up for decision were whether the delegation of authority to the President was an unauthorized delegation of legislative authority by Congress, and whether the standards set up in the recovery act were sufficient to permit the federal Government to limit the production of crude petroleum.

The action arose out of an injunction proceeding brought by the Government charging the defendant companies with producing oil in excess of the state allowable. An interlocutory injunction restraining future overproduction by the companies was issued by the District Court at Los Angeles.

Refusal of the court to act in this case removes any possibility of the court considering this spring the validity of the oil code, although other cases involving NRA may yet be decided during this term of court.

Appeal of the Natural Gas Co. of West Virginia, against the reduction in gas rates in Wheeling, will be heard by the Supreme Court. The court has formally decided to take jurisdiction and will hear arguments on the reduction, which was ordered by the Public Service Commission of the State.

Refineries in East Texas Resuming With Hot Oil Production 27,000 Barrels

By L. E. BREDBERG

FORT WORTH, Tex., Apr. 29.—Refinery operations in East Texas are again on the increase according to Railroad Commission reports. On April 17 only 16 plants were operating and not a single one operating on "hot oil," the first in the history of the field according to the commission. Last week, by the commission's reports, 29 plants were operating, 11 of which were running on untendered, "hot oil."

Plants in the field handled a daily average of 31,760 bbls. of oil per day during the week. They are connected to a daily allowable of around 17,350 bbls. per day. However, daily runs to plants for the week ending April 26, show a drop of around 14,000 bbls. under the previous week's runs. But with more plants operating, the current week's reports are expected to show a gain in daily runs and output of gasoline.

For the week ending April 21 reports show the following movements of refined products from the East Texas Field:

	Cars	Gallons
Gasoline	553	4,840,765
Fuel oil	171	1,622,265
Casinghead gasoline	133	1,164,465
Gas oil	58	483,935
Distillate	58	477,660
Residuum	35	321,665
Kerosene	24	196,565
Naphtha	2	16,225
Topped crude	3	30,330
	1,037	

Of the above, 1,019 cars were shipped with tenders, 18 going out under court orders, which is one-half the number of cars shipped last week under court orders. This may be of some encouragement to those who are hoping that "court order" gasoline shipments may be stopped, or materially reduced. Interstate clearance papers were given on 547 of the above cars while 223 were moved within the state and 267 went for coastwise movement. The 1,037 cars was a decrease of 53 cars under the previous week's reports, intrastate movements being curtailed by 22 cars under last week, and coastwise movements being cut by 84, whereas interstate shipments increased by 53 cars.

Truck movements on April 26, according to Railroad Commission figures, was 8,306 bbls. of gasoline and other products. Of this amount 3,903 bbls. were moved under tenders and 4,403 bbls. went out without the sanction of the commission.

The first of several receivership cases to be filed by the state attorney general's department against a refinery allegedly operating in the field in violation of an injunction secured against the plant, has been taken under consideration by the Gregg County District Court, after the defense counsel filed a plea in abatement on April 27, when the case came to trial at Longview, that day. The plea held: (1) That the plant has been sold to C. A. Reeves and consequently a receivership should not issue; (2) that the injunction case against the Acme Refining Co. was on appeal and consequently the district court did not have jurisdiction to appoint a receiver, and (3) that the state conservation law containing the receivership provisions became law after the injunction was secured, and consequently could not be applied in this case.

This was the first case to arise under the provisions of the new state law authorizing the State to apply for receiverships if injunction restraining violations of the conservation law and Railroad Commission orders, rules and regulations is violated. Taking the case under consideration will no doubt mean a delay.

Final hearings have been set for May 16 and 18 on several cases against the Railroad Commission pending for some time in Federal Judge Randolph Bryant's court (Federal District Court for the Eastern Division of Texas).

These cases, to be tried on their merits, involve eight different parties or companies and 589,620 bbls. of reclaimed oil, fuel oil, topped crude and crude tops, residuum and distillate. If the plaintiffs fail to appear the cases will be dismissed, according to reports coming from the court after other plaintiffs had failed to appear at hearings at Sherman on April 24.

A force has been counting the trucks moving out of the East Texas Field to tabulate the number and make correct reports, but this work has been discontinued. Truck movements are expected to gain in volume as a result of this discontinuance.

Decrease Per Well Allowable

On May 1 the daily allowable of the field will be curtailed by decreasing the per well allowable from 3.45 to 3.4 per cent of the hourly per well potential. This will cut the new allowable oil production by about 5,055 bbls. per day under the estimate set by Secretary of Interior Ickes for the daily market demand for Texas crude for May. The daily allowable for the field on April 26 was 444,491 bbls. from 16,930 wells, 2,721 classed as marginal wells. The total hourly potential of the field was 12,612,503 bbls. on that date.

Overproduction in the field was estimated at around 27,000 bbls. This figure is arrived at by checking truck movements, runs to refineries, tank car shipments, and using other pertinent data.

Judge Ames Contends That All Codes Should Be Voluntary and Clarified

WASHINGTON, D. C., Apr. 30.—All codes for industry should be voluntary and should be limited to a clarification of methods of unfair competition, Judge C. B. Ames, chairman of the board of the Texas Co., said in addressing a luncheon here today in connection with the annual meeting of the U. S. Chamber of Commerce.

Judge Ames, during the past year, has served as a member of special committees appointed by the chamber and also the National Association of Manufacturers to make studies of the NRA and is also chairman of the Business Conference Committee sponsored by prominent industrial leaders which made recommendations applying to the recovery act.

Judge Ames in his talk said the present NRA should be allowed to expire in June and a substitute act enacted which would differ substantially from the law now in effect. He condemned the Harrison bill pending in Congress, generally conceded to be the administration proposal for the continuance of the NRA after the present law expires. This bill makes special provisions for the oil industry as one of the natural resource industries and provides for widening rather than contracting federal regulation. Judge Ames condemned this proposed expansion of control by the government.

In regard to any new recovery act, in addition to the voluntary feature, Judge Ames made the following suggestions: Codes should be drafted with the greatest care so as to prescribe a rule of action which is clear, consistent and understandable. Labor provisions should be limited to minimum wages and maximum hours and prohibition of child labor. Codes should be approved by a quasi-judicial body and not by an executive agency. Enforcement should be by judicial process and in addition to the codes of fair competition the law should permit agreements in restraint of trade when approved by a proper federal agency.

Southwestern Production District Meeting Discusses Live Topics

By NEIL WILLIAMS
Gulf Coast Bureau, The Oil and Gas Journal

SAN ANTONIO, Tex., Apr. 29.—Chase E. Sutton, manager of the Gulf Coast division of the Pure Oil Co., Houston, was elected chairman of the Southwestern District, Division of Production, of the American Petroleum Institute at its spring meeting here April 25 and 26. For the past term, Mr. Sutton has been vice chairman of the Gulf Coast district. The district is composed of the states of Texas, New Mexico, Louisiana and Arkansas.

Other officers elected are: Harvey Hardison, California Co., Midland, Tex., vice chairman for West Texas; Carl E. Reistle, Jr., East Texas Engineering Association, Kilgore, vice chairman for East Texas; W. V. Vietti, Texas Co., Houston, vice chairman for the Texas Gulf Coast; L. B. Holland, Phillips Petroleum Co., Breckenridge, vice chairman for North Texas; R. D. Risser, Shell Petroleum Corp., Iowa, La., vice chairman for Louisiana and Arkansas, and F. E. Heath, Sun Oil Co., Dallas, secretary-treasurer.

Members of the advisory committee, in addition to Mr. Sutton, the general chairman, consist of: E. H. Blum, Atlantic Oil Producing Co., Dallas, chairman; Don Collins, Shell Petroleum Corp., Houston; M. G. Cheney, Anzac Oil Corp., Coleman; R. G. Hamaker, Reed Roller Bit Co., Houston; J. D. Collett, Collett & O'Keefe, Fort Worth; Charles Fitzgerald, Sinclair Prairie Pipe Line Co., Fort Worth; E. DeGolyer, Felmont Corp., Houston; Charles Gladden, Magnolia Petroleum Co., Dallas; James Hutcheson, Rio Bravo Oil Co., Houston; Blaine Johnson, Simms Oil Co., Dallas; Roy B. Jones, Panhandle Refining Co., Wichita Falls.; E. A. Landreth, Landreth Production Co., Fort Worth; A. M. McCorkle, Stanolind Oil & Gas Co., Fort Worth; R. S. McFarland, Texas Seaboard Oil Co., Dallas; F. Ray McGrew, Standard Pipe Line Co., Shreveport; E. H. Griswold, Continental Oil Co., Fort Worth; R. H. Morrison, California Co., Dallas; John Ritter, Sun Oil Co., Dallas; Charles F. Roeser, Roeser & Pendleton, Fort Worth; Arch H. Rowan, Rowan Drilling Co., Fort Worth; Joe H. Russell, Gulf Production Co., Houston; F. C. Sealey, Texas Co., Houston; B. S. SoRelle, Pure Oil Co., Fort Worth; John R. Suman, Humble Oil & Refining Co., Houston; W. L. Todd, Columbia Oil & Gas Co., Dallas; E. H. Salrin, Tide Water Oil Co., Houston.

President Hill's Address

Approximately 200 members and visitors were in attendance. In the opening address by George A. Hill, Jr., president of the Houston Oil Co., on the subject, "Modern Conquistadors," those present were referred to as modern Conquistadors of a great and unexplored realm meeting "to consult with one another upon the subject of our existing explorations and discoveries within that realm, and concerning the use of the knowledge and experience gained thus far in guiding us in our present and future explorations."

Mr. Hill appropriately likened the oil industry to the Spanish Conquistadors, who, under royal commission, set out for conquest of new lands supposedly rich in mineral wealth, San Antonio being one of the outposts of the early Conquistadors.

"It is the habitat of the minerals that we seek in our explorations, and it is but as servitors that we engage in its search," Mr. Hill narrated. "No royal servant, acting under His Majesty's most gracious command, for the sole enrichment of royalty, ever yielded more bountifully than this purely private enterprise of the modern Conquistadors for the support of the modern master—the organized government of the American people.

"The royal commission has been supplanted by the private landowner's lease. Unlicensed pillage has been supplanted by a regulatory commission's permit to drill. Confiscation has evolved into conservation."

Mr. Hill picturesquely pointed out that with the modern Conquistadors new frontiers no longer are reduced by the poniardo, arquebus and the rapier but by the pendulum, the seismograph and the torsion balance.

"The chronicles of the early Conquistadors were lodged with the Council of the Indies and in the Archivo General de Indias in Seville; whereas your explorations of today are chronicled in the driller's log filed in the oil and gas section of the Railroad Commission in Austin, or in similar archives. The literature of the ancient Mayas was burned and destroyed, in the hope that it would enjoy eternal oblivion, and the markers of that day were rivers and mountain ranges; whereas, the modern Conquistadors are studying and penetrating the lithology of the earth's crust for the purpose of disseminating the knowledge thereof, and markers are microscopic foraminifera. The oil industry, the modern Conquistador, may well be proud of its accomplishments," Mr. Hill concluded.

W. T. Doherty, Humble Oil & Refining Co., Houston, and chairman of the southwestern division the past year, presided at the opening session Thursday morning.

Following Mr. Hill's address, H. N. Blakeslee, director of the department of accident prevention, American Petroleum Institute, Dallas, presented a paper on "Benefits and Hazards Affecting the Oil Worker." Mr. Blakeslee pointed out that as a result of the work which had been done in improving conditions for oil field workers and minimizing hazards to health, the petroleum industry has become more and more attractive to those seeking employment, this being instrumental in oil companies being able to build up extremely high class personnel. He emphasized that work in the oil fields, once considered one of the most hazardous occupations, no longer is more dangerous than in any other industry.

Papers Presented

In a paper on the "Currently Active Fields of Southwest Texas," Thornton Davis, Simms Oil Co., San Antonio, presented a picture of the various districts and plays of Southwest Texas, and narrated recent important developments and their significance. His paper was supplemented by discussions by Joseph M. Dawson, Gulf Production Co., and Charles H. Rowe, Sun Oil Co., both of San Antonio.

W. V. Vietti, Texas Co., Houston, presided at the Thursday afternoon session. On the program were G. I. McBride, chief petroleum engineer, Arkansas-Louisiana and East Texas division, Texas Co., Shreveport, La.; C. E. Reistle, Jr., East Texas Engineering Association, Kilgore, and W. S. Crake, petroleum engineer, Shell Petroleum Corp., Houston. In the absence of Mr. Reistle, his paper was read by R. C. Buchan, petroleum engineer, Humble Oil & Refining Co., Houston.

Mr. McBride, who was the designer of the large sea-going submersible drilling barges being used by Texas Co. in the development of water located fields of Coastal Louisiana, had as his subject, "Drilling Barges." He discussed in detail the savings and advantages in the use of these barges, their development and construction, and their application. His paper created considerable interest and Mr. McBride was the recipient of numerous questions. The paper was illustrated by stereopticon views.

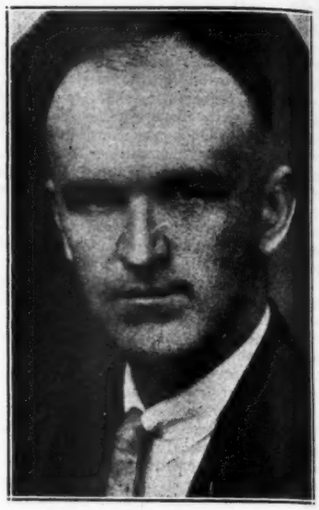
The paper by Mr. Reistle on "Paraffin Production Problems," read by Mr. Buchan, gave a complete analysis of paraffin, its action, causes of deposition and problems, and methods for preventing and removing paraffin accumulations.

Mr. Crake's paper on "Corrosion, Its Nature and Effect on Selection and Installation of Production Equipment" was published in the April 25 issue of The Oil and Gas Journal.

At the closing session Friday morning, Chase E. Sutton, manager, Gulf Coast division, Pure Oil Co., Houston, presided. The first paper presented was by George S. Rice, Jr., of Edgar Tobin Aerial Surveys, San Antonio, on "Progress of Aerial Photography and Development of Photographically Controlled Ownership Maps."

Oil's Importance to Texas

A. D. Simpson, president of the National Bank of Commerce, Houston, who addressed the gathering on "What the Oil Business Means to Texas Banking." Mr. Simpson presented statistics to show that the oil industry exceeded all others in the State in money value of production, number of persons actually employed and dependent upon the industry. He pointed to oil as the State's greatest resource. The industry provided a livelihood for approximately 577,600 people during 1934, or one out of each 12 persons in the State. The remaining 11 were affected directly by the spending of salaries and wages in purchases and general expenditures which the industry made possible. He said one-fifth of the entire State is under lease for oil which is more than twice the number of acres devoted to cotton growing. Leases are in more than 200 of the 254 counties of the State and approximately 95 per cent of the State is regarded by geologists as favorable to the discovery of oil. Mr. Simpson referred to the tremendous investments which had been made by the industry in pipe lines, refineries, tank cars, tankers moving in and out of coastal ports, and in other branches. The industry pays the State $62,000,000 annually in taxes, and the revenue from the gasoline taxes amounts to around $33,000,000 annually.



C. E. SUTTON

A very complete paper on the subject of "Drill Stem" was prepared and presented by H. W. Fletcher of the Hughes Tool Co. He discussed in detail the development of drill stem and tool joints, design factors entering into the causes of fatigue and failures, metallurgical and other improvements, and increased requirements which are being placed on drill stem and tool joint.

Discussions of various phases of Mr. Fletcher's paper were made by H. G. Texter of Spang, Chalfant & Co., Inc., and M. T. Archer, director of research of the National Superior Co. Mr. Archer's discussion was read by the chairman.

The final paper on the program was offered by W. V. Vietti of the Texas Co., on "Blow-Out Prevention and Control."

One of the high lights of the entertainment features was the garden party and reception Thursday evening by Edgar Tobin at his residence. A dinner-dance was given Friday night.

The meeting was held coincidentally with the annual Fiesta San Jacinto, an elaborate celebration, and the various parades and programs furnished diversion for the A.P.I. visitors.

Texas Co. Contemplating $100,000,000 Refunding

C. B. Ames, chairman of the board of the Texas Corp., told stockholders at the annual meeting the company is contemplating refunding at lower interest rates its approximately $100,000,000 of funded debt. H. T. Klein, vice president and general counsel, was elected a director to succeed T. P. O'Neill. Mr. Ames said recent legislation in Washington and Texas had improved the "hot" oil situation so the company felt more optimistic about operations in 1935. T. Riever, vice president in charge of French operations, said the new refineries in France which will operate on oil brought from the Far East will not injure the operations of the company in that country. In his speech to the stockholders, Mr. Ames pointed out that motor vehicles paid about $1,100,000,000 a year in taxes, or three times the amount paid in taxes by the railroads. When the motor vehicle tax is diverted to purposes other than highways, he observed, it becomes merely a sales tax, "and a sales tax ought not be applied at 100 per cent on the wholesale value of the commodity when other things are not taxed at all."

Technical Discussions Feature Convention of Gasoline Manufacturers

By W. T. ZIEGENHAIN

Featuring a symposium on motor fuel volatility and its effect on automobile design and operation, the fourteenth annual convention of the Natural Gasoline Association of America opened in the Tulsa Hotel in Tulsa on Wednesday with registrations running substantially ahead of a year ago. The three-day meeting includes the report of the various committees, the symposium and papers on technical and economic subjects, with entertainment provided by the Natural Gasoline Supply Men's Association.

In opening the meeting Wednesday afternoon, D. C. Williams of the Continental Oil Co. and president of the association commended the men working on the various technical committees for the work accomplished in the past year. In

D. C. WILLIAMS

regard to the technical committee, of which R. C. Alden of the Phillips Petroleum Co. is chairman, he said:

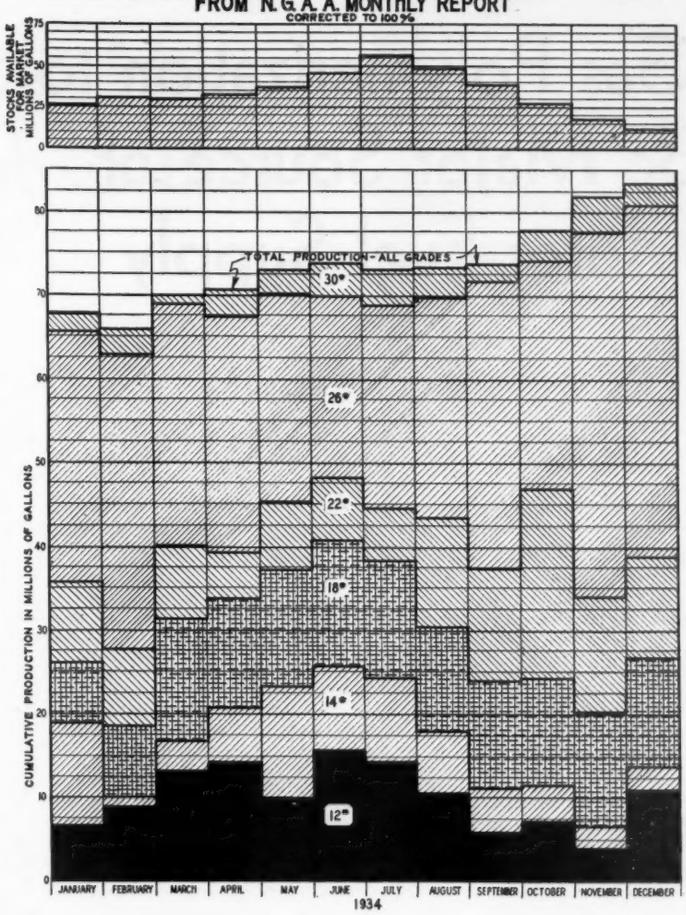
"The committee is again working on the modification and clarification of the Reid vapor pressure method. Were it not for the activities of the committee, some of the members of which serve on similar committees of the American Society for Testing Materials and the American Petroleum Institute, it is entirely possible that the Mid-Continent natural gasoline manufacturers and marketers might have had a most unsatisfactory and expensive Reid vapor method written for, and thrust on them, as a new A.S.T.M. standard. This method involved the exclusive use of a pressure bomb and was recommended to the joint A.P.I. committee by the California Natural Gasoline Association as a new standard test method. While fully cognizant of the accuracy and efficiency of the proposed method, our own committee recognized that the diferences between the Mid-Continent and the California operations were such that the adoption of the bomb as the universal standard would be a serious and expensive handicap to operations in the Mid-Continent. As a result of our objections and comparative work in both groups, a satisfactory compromise is being worked out which is acceptible to both regions."

Mr. Williams also commented upon the vigilance needed in guarding against unsound or damaging methods for testing gas and writing gas contracts. His remarks follow: "In regard to the report of the gas testing committee which will be made by its chairman, E. C. LeFevre of the Empire Oil & Refining Co., I wish to point out the vigilance on the part of its members. These men are scanning the recommendations of another group who would substitute a new gas testing method for the standard already in existence. Admittedly the suggested method has many fine points, notably its ability to accurately determine the content of very lean gases, but before it is adopted it should be thoroughly tested to determine its adaptability to Mid-Continent operations. Accordingly, the gas testing committee is now conducting field tests with apparatus constructed at considerable expense by member companies to ascertain whether the new method would be an advisable standard and applicable to the operations of this region. If it is not, this committee will vigorously oppose its adoption and thereby save operators in this part of the country the large expense of changing their present methods. On the other hand, if as a result of their exhaustive field tests the committee decides that the new method is superior to those methods now in use and would be beneficial to Mid-Continent operations, they will join with the original proponents of the new method.

"The present standard N.G.A. contract is neither a "buyers" or a "sellers" contract but is entirely fair to both. Our gas contract committee already has this matter under consideration and is closely watching the activities of the gas testing committee to determine what effect the new method might have on contract forms. This committee is also considering the possibility of adopting a price curve or table which would eliminate the abrupt changes in the prices paid for casinghead gas when a slight change in the market price of natural gasoline, or the content of the gas, increases or decreases the price paid for casinghead gas by 5 per cent. Any changes made, however, should neither increase or decrease the average cost of casinghead gas but should merely eliminate the abrupt changes in such cost as exists under our present contract. This move is part of the modernization of the N.G.A.A. standard contract under which most of the gas going to natural gasoline plants of the country is sold. To those of you who get the full significance of, and understand the importance of these activities, I commend you to the report which the chairman of this committee, J. W. Cowles of the Shell Petroleum Corp., will make.

"There is one other feature of our work which is comparatively new and yet is one of the most valuable to the industry as a whole. This is our monthly production report of Mid-Continent natural gasoline production and storage, a sample copy of which, together with the 1934 summary curves, has been distributed among you. It represents our first

NATURAL GASOLINE PRODUCTION BY GRADES IN MID-CONTINENT FROM N.G.A.A. MONTHLY REPORT



venture in systematic collection of statistics but has been more successful than we originally hoped and the economics committee is working now on changes which will make it even more valuable.

"For the benefit of those of you who may not be familiar with this report, may I explain that individual company figures on monthly production by grades and total storage figures are obtained by questionnaire. All of these individual company reports are kept in strictest confidence in our Tulsa office where only the secretary has access to them in the compilation of the monthly total figures. Only those companies which contribute their figures receive copies of the monthly summary and it is never released for publication."

Passing from a discussion of the technical problems confronting the association to that of marketing, Mr. Williams continued:

"Mid-Continent and Gulf Coast refiners do not and probably cannot use all our production and the surplus must be moved coastwise or export. These customers are more interested in their own motor fuel price relationships to their cost of natural than they are in our spot market. They are in some respects a 'dumping ground' for our surplus and many of such sales can only be made at bargain prices. When such sales are made they relieve our distress and our markets improve, however, if no such sales are developed, the extra natural must be absorbed here and our spot prices decline."

W. F. LOWE

Striking close to the subject of markets, William F. Lowe, secretary of the association, discussed the activities of "Committee J," which was established in the past year as the representative body in Washington to see that natural gasoline received due consideration when allocations for motor fuel production are made. It was difficult for the gasoline industry to present its case until this committee was recognized, and with this part of the work completed, Mr. Lowe offered the suggestion that genuine benefits would accrue to manufacturers through its endeavors.

Before the meeting adjourns the association will elect a new president and there will be a revision in the board of directors. These will be named on Friday.

The Gasoline Supply Men's Association holds its election of officers on the first of each year and this provides for completion of a smooth working organization by the time of the annual gasoline men's convention. This year the supply men prepared an exceptionally fine program of entertainment. The luncheons which have proved a feature of the past meetings were continued this year and the Wednesday night smoker, followed by the dance on Thursday night called for elaborate preparations.

Gas Polymerization to Be Major Source of Motor Fuel Supply

By C. O. WILLSON

NEW YORK, Apr. 27. — Polymerization of refinery gases now largely used as plant fuel will shortly become a major source of motor fuel supply of high octane rating if developments described here this week in connection with the eighty-ninth meeting of the American Chemical Society prove to have the commercial significance indicated by the detailed discussions. Members of the Division of Petroleum Chemistry of the A.C.S. in a joint symposium with the Division of Gas and Fuel Chemistry heard several papers which described the latest research and development work in polymerization including data covering semicommercial and commercial operations. It was indicated that before the end of the year the results obtained in actual plant operations, will mean the beginning of its general acceptance as a necessary phase of modern refinery processing.

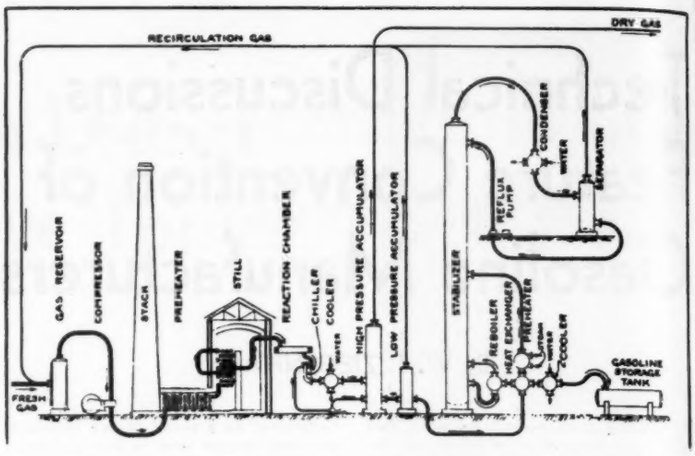
The potential significance of this development was apparent from the data presented at the symposium. It was explained that the production of gas from cracking operations in the United States totaled 300,000,000,000 feet yearly. It was stated that with one process which has been developed to the commercial stage it was possible to secure 1,000,000,000 gallons of gasoline yearly through the polymerization of the olefin hydrocarbons in this gas. This is more than 5 per cent of the total motor fuel production in the United States at this time.

In another paper estimates as to the possible production of motor fuels through polymerization were still more impressive. It was pointed out that through the cracking or pyrolysis of paraffin hydrocarbons to form olefins and the polymerization of the latter, natural and refinery gases (other than methane) theoretically could furnish a motor fuel supply equal to the present production of cracked gasoline. The latter is now equal to more than 500,000 bbls. (20,000,000 gallons) daily, or more than 40 per cent of the total supply in this country.

Gradual Expansion

It was not the thought of the meeting here that this possible peak production could be obtained quickly or easily. There are many practical difficulties to be overcome in the commercial application of findings scientificially established in the laboratories and pilot plants. Outside the meeting the thought was expressed that the art of polymerization as applied to refinery gases in the production of motor fuels, occupied the same position that the so-called liquid phase cracking did approximately 25 years ago. In that case the simplest forms of commercial application followed the accumulation of basic chemical data, with the manufacturing phase rapidly gaining momentum when the problem became one largely of perfecting mechanical applications. As revealed in the papers here the chemists are accumulating the necessary fundamental data on the many phases of polymerization around which the applications to refinery processing will be established.

Many in the oil business not connected with the refining end, frequently ask for a non-technical definition of polymerization. It has been described as the opposite of cracking in its application to petroleum refining. Cracking involves the destructive distillation of the heavy fractions of petroleum in order to secure materials which have a lower boiling range suitable for use as motor fuels. Polymerization operates with hydrocarbons which are gases under atmospheric conditions and joins these materials of low molecular weight into heavier products having the distillation properties of gasoline. Thus the art of petroleum refining to supply the demand for motor fuel in the future will not only decompose the heavy fractions of petroleum but will in effect "recompose" the light gas fractions into products having the same general specifications.



Simplified flow sheet showing main operating features of polymerization unit designed to handle 6,000,000 cubic feet cracked gases daily

As in the case of cracking the principal factors in the polymerization of gases are heat, pressure and time with results also directly dependent on the percentages of unsaturated hydrocarbons in the gases. Catalysts are being used in some investigations. The work covering the pyrolysis or cracking of saturated hydrocarbons in the gases to increase the available percentages of unsaturates is closely tied in with this work on polymerization.

Polymerization of hydrocarbon gases in the production of certain chemicals has been carried on commercially for some time. In this production low costs are not a major factor. The demand for these chemicals is so small that it was early realized that they would furnish only a small outlet for the gases available. When technologists turned their attention to the possibilities of motor fuel production they were immediately confronted with the major problem of figuring costs on a basis comparable with those in the distillation of crude petroleum and the extraction of gasoline from wet gas by absorption or compression. This is the problem which is now being solved.

Commercial Installation

C. R. Wagner, chief chemist of the Pure Oil Co., at the symposium, described the results which have been obtained in the polymerization of olefines. The Pure company, due to its important position in vapor phase cracking over a period of several years, has been a pioneer in investigating possibilities in the utilization of refinery gases. In this paper, Mr. Wagner described some of the results obtained in laboratory, semi-commercial and commercial installations. The latter was a unit designed to handle 5,000,000 feet of cracked gas daily. This plant has produced in excess of 400 bbls. daily of gasoline boiling point material. The accompanying flow chart shows the main operating features of this installation. The table gives the analysis of two gases used a charging stock in an installation with a capacity of 600,000 feet daily. The gas was obtained from a cracking operation using Mid-Continent topped crude. The unit was operated at 650 pounds pressure with a temperature of 1,000° F. The following table gives the properties of the two gases:

	Gas	
	Fresh	Processed
Methane, hydrogen, etc.	24.2	41 3
Ethylene	17.9	2.9
Ethane	12.7	24 5
Proplyene	37.2	21 0
Propane	4.1	7.7
C_4 compounds	3 8	2.6
C_5 compounds	...	0 9
Specific gravity	1.124	0.964
Hydrogen	2.1	2 8

The properties of the gasoline obtained from the polymerization operation were as follows:

Gravity, A.P.I.	56.5
Initial	92.0
10 per cent	128
20 per cent	146
30 per cent	166
40 per cent	182
50 per cent	201
60 per cent	222
70 per cent	248
80 per cent	280
90 per cent	328
Endpoint	398
Residue	1.0
Reid vapor pressure	10.0
Sulphur	trace
Octane No., C.F.R. research	96.0
Octane No. A.S.T.M.	78.0

Use of Catalyst

In a paper entitled, "Polymerization—A New Source of Gasoline," by V. N.

(Continued on Page 44)

Petroleum division dinner of the American Chemical Society, New York

Oil Production: Analysis of Its Development and Stabilization

By WALLACE E. PRATT
Vice President, Humble Oil & Refining Co.*

WALLACE E. PRATT

The oil-producing industry is commonly thought of as a prosperous, money-making enterprise, whose effort has yielded it marvelous profits. That this conception is ill-founded is revealed by the briefest analysis of the record. From the date of its inception in 1859 to the end of the year 1934, the American oil industry has produced 16,700,000,000 bbls. of oil. During the same period it drilled 825,135 wells in search for oil, including 191,870 dry holes. In return for its effort, the producing industry has received out of the sale of its part of the total production a little more than $17,000,000,000. If one knows anything of the cost of producing oil, he is immediately struck with the suspicion that the producing operation so far cannot have been very profitable.

Record by Periods

If the record be examined more closely, it appears that during the period from 1859 to 1900, inclusive, the industry drilled 173,045 wells, of which 32,000 were dry holes, and from which 1,007,072,000 bbls. of oil had been produced by the end of the period. For his part of this production the producer received $895,230,000, the average price being a little more than $1 per barrel. His return through this period amounted to $5,200 per well. Inexpensive as these old wells were, drilling and equipping costs must have consumed most of the producer's income during this period.

From 1901 to 1919, inclusive, the industry drilled 349,586 additional wells, 71,176 of which were dry holes, and produced 4,041,662,000 bbls. additional oil. During this period the producer received from the sale of his share of the oil produced $3,707,000,000, again barely more than $1 per barrel. His gross income per well drilled during these years amounted to $10,600. Wells had become deeper, more expensive; there is still not much room for profit.

Steadily Mounting Costs

From 1920 to 1934, inclusive, the oil producer drilled 302,504 additional wells, of which 87,919 were dry holes, and produced 11,658,692,000 bbls. additional oil. During this period he received from the sale of his share of the oil produced $12,760,000,000, or $1.30 per barrel; his income per well drilled amounted to $42,000. For this period the cost of drilling wells and of equipping producing wells is readily deduced since complete records of representative experience are available. On the basis of such records, drilling and equipment costs alone amount to not less than $25,000 for the average well drilled by the producing industry, or to $0.75 for each barrel of oil sold for the account of the producer, between the years 1920 and 1934, inclusive. In addition to drilling and equipping wells, the producer must acquire his leases, discover his oil, lift it to the surface after his wells are completed, and pay his taxes and overhead. Estimates based on actual representative experience show that these items combined amounted to a little more than the total cost of drilling and equipping wells in the case of the average producer, during the period under review. The oil for which the average producer received $1.30 per barrel during this period, then, actually cost him $1.50 per barrel.

This is the period of greatest activity the producing industry has known; it is the period of highest average prices—during it the bulk (70 per cent) of our total oil recovery to date was produced and marketed. Average costs per barrel of oil produced during this period probably depart but slightly from average costs over the life of the producing industry; at any rate, in earlier years, with the lower average prices, there could not have been much profit to the producer.

Service at a Loss

It is obvious that the production of oil in America has not been a profitable venture up to date. Individual units in the industry have, of course, made large profits from time to time, through good fortune, or efficiency, or some other cause. On the whole, however, the industry has operated at a loss. In this respect it is like another extractive industry, gold mining, of which it has become axiomatic to say that "more gold has gone into the ground than has ever come out."

This experience of the oil-producing industry throws a revealing light on the practical operation of the capitalistic system. Impelled solely by the profit motive, the oil-producing industry has served society efficiently and adequately, judged by the standard of prices paid by the consumer, through one generation after another, yet the whole service has been rendered at less than average cost. Communism denounces capitalism for its profit motive, and would supplant it with a profitless economy, yet in this instance capitalism has successfully carried out a formidable undertaking against great odds without any overall profit. It is worthwhile to realize that even when no actual profit is forthcoming, the lure of a possible profit, the hope of a future profit, is incredibly effective in spurring men on to vigorous and sustained effort.

Search Must Go On

The ultimate profit or loss to the oil producer will not be determined, of course, until he has produced the balance of the oil he has already developed. The average producer, after 75 years of profitless effort, still hopes for a profit in the future. His proven reserves at the moment amount to 10,000,000,000 or 12,000,000,000 bbls., and a considerable part of the expense of producing this reserve has already been met. Doubtless he would make a profit on the production of this reserve, assuming that the average price for oil is as high in the future as it has been in the past, if he were merely to sit down and deplete his present reserves. But this he will not do; on the contrary, he will continue to go out, as he has done in the past, and search for new oil reserves. It is necessary that he should do this. Whenever the producing industry fails to make adequate new discoveries, the refining industry will be driven to supplement its supply of crude oil by imports or by the adoption of a substitute raw material.

Reserves and Requirements

Further analysis will reveal that for the average producer finding costs promise to be large enough in the future to absorb his anticipated profit on his proven reserves. The producing industry holds in proven reserve about 12 times the amount of its present annual production. Probably the ratio of proven reserves to annual requirements should not fall below this figure. Other essential mineral industries, such as coal, iron, and copper, maintain proportionally much greater reserves. To maintain the present proven oil reserve, in view of the anticipated future demand, will require the discovery of about 1,000,000,000 bbls. of new oil each year over the next decade.

The accompanying table, which analyzes the production and discovery record up to date, will indicate the magnitude of the task of finding 1,000,000,000 bbls. of oil a year for the next 10 years. The record is divided into five-year periods subsequent to the year 1900; the period prior to that year, being of lesser significance, is not subdivided. The table shows for each period: Average annual volumes of production and discoveries; the relation of total production to total discoveries at the end of each period; the ratio of average annual production to average annual discoveries; and the ratio of average annual discoveries to total discoveries during the life of the industry.

ANALYSIS OF PRODUCTION AND DISCOVERY EXPERIENCE OF THE AMERICAN OIL-PRODUCING INDUSTRY BY PERIODS

(1)	(2)	(3)	(4)	(5)	(6)
1859-1900	25	80	0.3	0.3	0.003
1901-1905	105	340	0.3	0.3	0.01
1906-1910	175	275	0.4	0.6	0.01
1911-1915	250	500	0.4	0.5	0.02
1916-1920	370	585	0.5	0.6	0.02
1921-1925	650	820	0.6	0.8	0.03
1926-1930	895	1,990	0.5	0.4	0.07
1931-1934	870	580	0.6	1.5	0.02

Column No. 1, periods analyzed.
Column No. 2, average annual production in millions of barrels.
Column No. 3, average annual discoveries in millions of barrels.
Column No. 4, ratio of accumulated production to accumulated discoveries.
Column No. 5, ratio of average annual production to average annual discoveries.
Column No. 6, ratio of average annual discoveries to total discoveries for all periods.

As shown by the table, our annual production, averaged by periods (Column 2) has increased uniformly up to 1930, and, in spite of the depression, has gone off but little since then.

Analyzing the Situation

Average annual discoveries (Column 3) increase rather regularly through each successive period from 1859 to 1925, but the next half decade, 1926 to 1930, shows a tremendous increase—more than double the highest previous annual average—and the final four years, 1931-1934, show an equally sharp decline to a figure lower than any other average year since the 1911-1915 period. Our highest discovery rate over a five-year period has been nearly 2,000,000,000 bbls. per year; over a 10-year period, 1,400,000,000 bbls. per year. Over the last four years, our average rate has been only 580,000,000 bbls. per year. During the five-year period of our highest discovery rate (1926-1930) the industry found more than one-third of all the oil it has ever found and nearly all of its present major fields, including Yates, Kettleman Hills, Oklahoma City, East Texas and Conroe.

The rate of discovery curve climbs gradually to a conspicuous maximum in the period 1926-1930, and then slumps off sharply to a point lower than it has been for nearly 20 years. To one who has followed discovery experience the shape of this curve is significant. The growing rate of discovery through the early periods reflects, first, the application of geologic principles to the problem, beginning about 1915; second, the greatly accelerated effort to find oil, following the war; and, third, the culminating advantage which came with the introduction of geophysical methods of finding in 1926. The slump following 1930 is a reflection of the failure of finding technique, in spite of all efforts and all improvements, to cope with the task of maintaining the established discovery rate in the face of the ever smaller number and the greater obscurity of the pools remaining to be discovered. Even the recent remarkable progress in deeper drilling has not sufficed to overcome the growing difficulty.

Discoveries Fall Off

Our accumulated production (Column 4) amounted to three-tenths of our accumulated discoveries through 1900. This ratio has increased with fair uniformity up to six-tenths (double its early value) in recent years. Discoveries, in other words, have not kept pace with production. This fact is revealed again in Column 5 of the table which shows that, whereas our average annual production amounted to three-tenths of our average annual discoveries through 1900, it has increased until, since 1930, it has equaled 1.5 times our average annual discoveries. Column 6 shows that our average annual discoveries through 1900 amounted to only three-tenths of 1 per cent of our total discoveries to date. This ratio increased uniformly through each period up to 1930 when it reached a value of 7 per cent. Since 1930 discoveries have declined again to an average annual value of 2 per cent of our total discoveries to date.

In spite of its splendid achievement, the record of the oil-producing industry reveals certain weaknesses. It has not

*Before the Chamber of Commerce of the United States of America, Round Table Conference on Natural Resources, May 1, 1935, at Washington, D. C.

been profitable to the average producer, and it has had to contend with recurrent periods of both shortage and oversupply of its product. Because of these weaknesses its need for stabilization has long been recognized, and various methods for stabilizing it have been suggested. The term stabilization, in this connection, may be interpreted to signify the attainment of a status which will secure the performance by the industry of its obligations to our social economy, in an efficient and adequate manner, with a return to the average unit in the industry sufficient to insure its survival as a continuing enterprise.

Fairness of Stabilization

When the oil-producing industry seeks to stabilize itself, it asks for no privilege or concession from society that is not already accorded to other industries. The oil-producing industry is unique in two respects: (1) On account of the paucity of its proven reserves in relation to the demand for its products, it is obliged to expend a much greater proportion of its effort and its earnings on finding than other industries do; and (2) on account of the laws of property under which it operates, and the physical characteristics and habits of oil underground, both the industry at large and the various units that comprise it are powerless to adjust or to control their rates of production. In other industries, each competitor is free to produce at any rate he may choose, but in a competitive oil field in the absence of control no operator has any choice but to produce his oil as rapidly as possible, regardless of the market; otherwise he will lose his oil to his neighbor whose wells are being produced rapidly. Accordingly, the industry asks to be enabled to control its production of crude oil, and to keep its withdrawals in step with demand, in order to do equity among competing owners in a single field and to conserve its supply through decreasing waste and increasing ultimate recovery.

Not a High-Price Device

A number of politically-minded observers charge that control of production is merely a device to secure higher prices. It is not inherently such a device, and its use for such a purpose should not be tolerated. It will serve and should be used as a device for lowering costs and for doing equity between competing owners in a single pool. Through production control the reservoir energy common to any oil pool can be more efficiently utilized. Given efficient use of reservoir energy, fewer wells need be drilled; greater ultimate recovery can be obtained; longer flowing life for these wells can be assured; and drilling and pumping costs per barrel can be lowered accordingly. Each competitor in a given field shares these advantages, and in addition he secures himself in the opportunity to produce ultimately the recoverable portion of the oil and gas which originally underlay his land.

Too Much Drilling

It might be assumed from the analysis earlier in this paper, showing that operations in the producing industry have been carried on at a loss in the past, that prices paid for oil in the past have been too low. But this conclusion is not necessarily valid. If the industry had enjoyed the privilege of production control in the past, it might also have enjoyed a profitable operation even at the average realization per barrel which it received. It would have produced a greater total number of barrels of oil from the same pools; it would have saved the cost of drilling literally hundreds of thousands of unnecessary wells; and through the longer flowing life of its wells it would have saved easily one-half of the expense it has been put to for pumping oil from wells that had ceased to flow. Whatever future costs of producing oil may prove to be, it is certain that they will be lower, other things being equal, if the industry is enabled effectively to control production than if it is denied effective control.

Recent Improved Methods

Impressive progress has been made recently toward better control of production. That one large oil field after another, in which numerous owners operating small tracts, participate, should be developed in Texas on a 20-acre well-spacing pattern, was inconceivable five years ago. Yet this is the actual record of several newly developed oil fields in Texas. That "market demand" should be accepted as an element in determining allowable production; that ratable withdrawals from competing leaseholds in the same oil field are essential for the prevention of waste: These ideas were anathema to the average producer and to the average politician in Texas a few years ago, yet today they also are widely accepted.

Unfortunately, there are also glaring examples of continuing abuses. We have never yet attained a balance of supply with demand through control of production, in spite of years of effort, and the attempt to do equity between competing lease owners through production control has likewise failed grieviously in some oil fields. In the East Texas Field the allowable production is determined by the conservation authorities on a basis which still permits every well to produce the same amount of oil as any other well of equal producing capacity. Two wells on a half-acre tract each produce as much oil as a single well on an adjacent 10-acre tract. Under this method of control the half-acre tract will ultimately yield twice as much total oil and 40 times as much oil per acre as the 10-acre tract. The only remedy available to the owner of the 10-acre tract is to drill himself two wells on each half-acre tract of his land; 20 wells in all on 10 acres—a silly, wasteful procedure. Clearly such a system takes one man's property for the benefit of another, and is, therefore, indefensible. As a result of this method of allocation there has been a rush to drill wells on small tracts in the East Texas Field.

Efficiency of Utilization

The ultimate in efficient operation and in production control comes, of course, with "unit operation"—the operation of each separate pool as a unit, in the most efficient manner, without regard to property subdivisions on the surface, but with a distribution of the net earnings to the several owners on the basis of the recoverable oil and gas originally in place under each property.

Production Control

The relationships between control of production and waste, and between control of production and equity among adjoining owners or competitors in an oil field should be clearly visualized. The control of the quantity to be taken from any oil pool involves two functions: (1) The control of the aggregate withdrawals, and the maintenance of ratable withdrawals from the several competing properties, both for the purpose of preventing waste; (2) the distribution of the allowable production to the several competing properties in a pool on a reasonable, uniform and equitable basis in order to protect the property rights of the several owners and to give to each the opportunity to make efficient use of his fair share of the reservoir energy and to recover his fair and equitable share of the oil in the reservoir. To accomplish these purposes it is necessary, not only to control, but to limit production to market demand, i.e., ascertained demand for actual consumption.

Should Be No Price Freezing

In controlling production to demand there should be no freezing of prices. The price of crude oil should be left completely free to respond to every influence. To maintain an exact balance between supply and demand is so delicate an operation that it probably cannot be accomplished with absolute accuracy. At a given price level some marginal producer reduces his output; at a higher price level some marginal refiner reduces his purchases. The balance is distributed accordingly. An approximate balance is all that can be hoped for, but it can be made sufficiently precise to serve the purpose for which it is intended. A sensitive price structure is a potent factor in effecting a balance of supply with demand. Over the past 18 months prices of crude oil have been frozen through the influence of political considerations, in the face of disproportionately low product prices, only moderate withdrawals from excessive above-ground stocks, and continuing production in excess of allowables. There can be no doubt that the frozen price has aggravated the temptation to exceed the prescribed allowables. The disparity between the unchanging posted prices for crude oil and the freely moving sales price of gasoline over this period has worked a real hardship on those refiners who are large purchasers of crude.

Industry's Great Service

Whatever may be said in criticism of the American oil-producing industry and its operation in the past, there will be no denial of its effectiveness in attaining the prompt development of our petroleum resources, and in making oil available to the consumer at low prices, in comparison with the records of other nations. Great social and economic advantage has come to the United States as a result of this rapid development of its oil resources. Nearly two-thirds of the world's past production of oil has come from the United States, and gasoline has always sold here at a much lower price than is paid by consumers in other countries. Yet the total oil resources of other countries probably exceed those of the United States. If foreign exploration had been as energetic as exploration within the United States, gasoline would undoubtedly be as cheap and plentiful abroad as it is here.

It is essential that private initiative in the oil-producing industry continue to operate freely and energetically; otherwise the effort to find new oil fields may be seriously checked. The oil-producing industry seeks stabilization, but it must avoid regimentation. The wildcatter who searches for new oil deposits must be free to carry on vigorous and untrammeled exploration. He does not need as a stimulus the opportunity, hastily and wastefully, to recover a part of his competitor's oil. He does need security in the opportunity to produce, ratably and in proportion to ownership, his own oil. There will be sufficient incentive to the average oil producer to go out and look for new oil fields if he is assured of permanency of his fee and leasehold ownership of oil lands and of freedom to acquire prospective oil lands. Given this latitude and the benefits of stabilization through production control, the average operator will continue energetically his search for new fields, and at the same time he will produce more oil from a given field at a lower unit cost than he has in the past.

Many Fields Will Be Opened

It is perfectly safe to predict that many new oil fields will be discovered in the United States in the future. Our average discovery rate over the last decade has been a little more than 1,000,000,000 bbls. per year. In order to maintain our proven reserves intact at their present volume, we must continue to find at about this same rate over the next decade. The foregoing analysis of the finding record reveals clearly the character of the effort we must make in finding if we are to achieve the goal set.

Whether or not oil finding succeeds over the next decade in meeting demand without depleting proven reserves, it must, at some time in the future, remote or proximate, begin to lag seriously behind consumption. When that time comes the American manufacturer of liquid fuels and lubricants will gradually supplement the supply of raw material he has previously obtained from the oil producer in the United States with an increasing proportion of imported crude, provided oil for import be then available. Whenever the required supply is no longer to be obtained at reasonable prices from domestic production plus imports, the manufacturer will turn to substitute raw materials. Coal is the most likely substitute, and fortunately the reserves of coal within the United States are ample for our needs over as long a period as we should attempt now to plan. The change to coal as a substitute for oil will not be a sudden, disrupting change. It will take place gradually, as the oil supply slowly fails, and it will start before prices of products to the consumer advance far above present levels, assuming some future relief from excessive gasoline taxes. Nevertheless, gasoline from coal will cost more than gasoline from crude oil, and this circumstance, together with the disadvantage to the United States which would arise if it were forced to the use of substitutes at a time when the rest of the world still had ample reserves of crude oil, constitute the basis upon which the plea for conservation of crude oil reserves rests.

Crosbie and Warren Companies Will Build Gasoline Plant in Fitts Pool

J. E. Crosbie, Inc., and the Warren Petroleum Co., jointly have started construction on a 25,000-gallon per day natural gasoline plant in the Fitts Pool of Oklahoma. The exact location of the new plant is given as W half S quarter Section 29-2n-7e, on the Magnolia Petroleum Co.'s lease, Pontotoc County. The erection of this plant represents the largest item of gasoline plant construction in Oklahoma for more than a year.

The unit will operate as a combination compression and absorption system and provisions are being made to make alterations as anticipated changes in field conditions are effected. The new plant will be connected to about 50 wells when it starts operating and lines will be extended to a total of about 65 wells shortly thereafter.

Residue return lines are being laid in the ditches being dug for the gathering system and plans are being made to supply residue gas service to operators in the field.

The gasoline production will probably not exceed 5,000 gallons per day for the first few weeks of operation but the equipment will be capable of processing up to 25,000 gallons daily. The plant will process about 10,000,000 feet of gas daily as its initial operating schedule but this will probably be doubled after the field is under full development. Equipment is being installed which will permit manufacturing all of the standard grades of gasoline including 12-pound motor fuel.

Upon completion of the new plant the products will be distributed through the sales offices of the Warren Petroleum Co.

PARKER MELVIN PRESIDENT

BRADFORD, Pa., Apr. 27.—Parker L. Melvin, of this city, president of the Towne-Melvin Oil Co., was elected president of the Bradford District Pennsylvania Oil Producers' Association at the first meeting of the new board of directors.

Others elected were: C. N. Pfohl, Jr., and Tom D. Mallory, vice presidents; Lynn G. Smith, secretary, and A. E. Booth, treasurer.

Possibility of Deep Production in Northwestern Pennsylvania

By C. R. FETTKE[1] and S. H. CATHCART[2]*

Prior to the recent discoveries of relatively large-volume gas wells in the Oriskany sandstone in north-central Pennsylvania, practically the entire production of gas and oil in the State was confined to upper Devonian and higher strata. As the territory favorable for further testing of the higher formations has become more and more limited, the deeper horizons, those below the upper Devonian which have proven productive in the adjacent states of New York and Ohio, naturally have been receiving more attention. Discovery of oil and gas in the Oriskany of Kanawha County, West Virginia, in 1934, greatly extended the area of interest.

The deep horizons are much more easily accessible than they were at the time of most active development in Pennsylvania. Drilling technique has so improved that depth of drilling can no longer be said to offer serious difficulties. Dozens of wells 4,000-6,000 feet deep have been drilled in Pennsylvania in recent years, and one cable tool hole in Jefferson County reached a depth of 8,227 feet with the aid of only 795 feet of 6¼-inch casing. In Roane County, West Virginia, the deepest cable tool hole in the world reached 9,104 feet.

Northwestern Pennsylvania is perhaps the logical area in Pennsylvania next to attract exploration of the deep sands. Formations rise in general to the northwest, thereby reducing the depth and the cost of drilling, and the region lies between productive deep sand areas. Intensity of folding and possible consequent metamorphism of sands increases toward the southeast, thus suggesting that better sand conditions and more favorable environment for hydrocarbons may exist in the northwest than elsewhere.

The geology in northwestern Pennsylvania is perhaps as little known as in any part of the State. This paper should be accepted as an attempt to bring together available information.

The Regional Picture

In Figure 1 an attempt is made to summarize the structural setting and the results of deep sand development in the northern Appalachian region.

As is well known the regional structure is geosynclinal, a complex structural trough extending from the Cincinnati Arch in western Ohio to the structural front in eastern West Virginia and central Pennsylvania. The bottom line of the trough (geosynclinal[3] axis) in Pennsylvania follows a somewhat sinuous course from near the southwest corner of the State toward the northeast corner of McKean County. Throughout this distance and to a point just south of the Pennsylvania line the basin deepens (axis plunges) to the southwest. The basin effect is indicated in Figure 1 by the line of outcrop of the Onondaga limestone in New York and Ohio and by the structural front which in Pennsylvania corresponds closely to the Onondaga outcrop.

Superimposed upon this general structure are a series of minor folds; the anticlines, synclines and related structures

This is the first section of an important paper prepared by Messrs. Fettke and Cathcart. It will be continued in an early issue.

that are of local interest in oil and gas development work. Near the structural front in Pennsylvania these minor folds are strong, well defined features, but northwestward the intensity of folding decreases until, as the axis of the geosyncline is approached, the rocks are only very gently folded. Northwest from the axis of the geosyncline the intensity of folding continues to decrease. In Crawford and Erie Counties the beds of rock dip southerly at the rate of about 25 feet to the mile and otherwise appear, in general, to be only slightly warped.

Some of the favorable results of deep drilling in northwestern Pennsylvania and adjacent New York and Ohio are outlined in Figure 1 by conventions. In New York and Ohio the "deep" horizons of Pennsylvania are brought nearer the surface by the regional structure, and it is there that they have been most extensively explored.

Gas has been found in New York[4] as far down as the Potsdam (Cambrian) sandstone, a few feet above the pre-Cambrian granite, but not in commercial quantities. The lowest (oldest) strata in which substantial pools have been discovered belong to the Trenton series of Ordovician age. The Trenton outcrops on the northern shore of Lake Ontario, dips south at the rate of about 40 feet to the mile and is about 700 feet thick. It consists chiefly of limestone and dark calcareous shale. The first Trenton wells were drilled about 40 years ago and several gas fields have been developed in the Trenton in Onondaga and Oswego Counties. It is reported that some wells have had an initial volume of over 1,000,000 feet and rock pressure of 1,200 to 1,500 pounds, but that in general wells tend to be short-lived.

In Ohio,[5] the Trenton is productive only in the northwestern part of the State. In Pennsylvania it has been reached in only one well, a well drilled on Presque Isle, Erie County, in 1888.

The most widespread gas producing formation of New York is the Medina. It was first drilled in 1900, but did not gain recognition until considerably later. The upper part of what is called Medina in New York consists of 100 to 150 feet of sandstone, red at the top, and gray at the base. Most of the gas occurs in the middle and lower part of this sandstone, something like 1,500 feet above the Trenton gas horizon. The occurrence of gas in the Medina has been established in eight counties: Erie, Cattaraugus, Chatauqua, Genesee, Ontario, Monroe, Livingston and Wyoming, and the formation is believed to underlie all of western New York.

In Ohio, as in New York, the Medina (Clinton) is productive throughout a larger area than is any other sand. Also, it is the most consistent producer and the most important in yield of the producing horizons of the eastern part of the State. It has furnished profitable drilling for 40 years or more. Medina fields form a south-trending belt of irregular width that extends from Lake Erie to and beyond the Ohio River. The regional dip is easterly. Gas is the principal product, although some oil pools occur, chiefly on the eastern margin of the belt. The western margin of the belt marks the limit of production for the area east of the Cincinnati axis.

We have record of 16 wells drilled to the Medina in Pennsylvania, three of which found gas in amounts of 30,000, 115,000 and 600,000 feet. The Medina sandstone is believed to underlie all of the western part of the State.

The arcuate arrangement of the Medina fields of Ohio and New York and the manner in which they abut upon the shore of Lake Erie suggest that virgin Medina territory may lie not far off the south shore of the lake. Oil fields have been developed in water of appreciable depth at Maracaibo, Venezuela, and elsewhere, and it is not improbable that this Medina prospect may some day receive attention.

Early Discoveries

In Ohio, gas was discovered in a sandstone at the Oriskany horizon near Austinburg in Ashtabula County in the early nineteen hundreds and in the Oriskany sand near Cambridge, Guernsey County, about 10 years ago. The Guernsey County locality also produces some oil. The productivity of the Oriskany sand in Pennsylvania and New York dates from 1930 when gas was discovered in it in Yates County, New York, and Tioga County, Pennsylvania. The relatively large size of the wells has led to considerable exploration. Three fields have been developed and fields are in prospect at five other localities. As yet only gas has been found in commercial amounts but shows of oil are reported in several isolated wells. Discovery of oil and gas in commercial quantity in the Oriskany of Kanawha County, West Virginia, in 1934 has greatly extended the area of possible interest in Oriskany production.

The Oriskany sandstone, although fairly widespread, is relatively thin and is not so continuous as the Medina. The sand has its characteristic development in outcrop in Oneida, Madison and Onondaga Counties, New York; west from Onondaga County its outcrop is intermittent. The approximate subsurface limits of the sand so far as known in southwest New York, northwest Pennsylvania and eastern Ohio are indicated on Figure 1. The sand is also known to be absent in an area in southeast McKean and southwest Potter County, Pennsylvania. The possible productive area of the Oriskany is thus restricted.

In addition to these "principal" prospective deep horizons, there are a number of other horizons between the base of the Chemung or shallow-producing horizons and the Medina that may locally prove to be commercially important.

In New York the Salina and Onondaga beds, while not regarded as prolific sources of gas except locally, do occasionally yield moderate flows. These two series of beds lie below and above the Oriskany, respectively, and where the Oriskany is absent are contiguous. Locally, shows of oil also have been reported in the Onondaga.

Below the Salina is the Lockport dolomite, which in northern Ohio may include a locally productive porous zone known as the Newburg sand. What may correspond to this horizon has yielded indications of gas in some Pennsylvania wells.

Between the Onondaga and the Chemung oil and gas zone are stratified

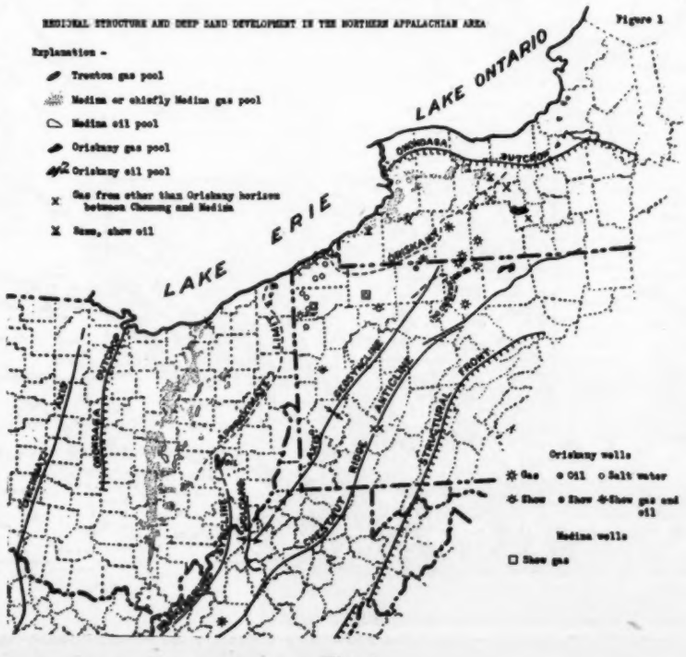


Fig. 1

[1]Professor of Geology, Carnegie Institute of Technology.

[2]Senior Geologist, Pennsylvania Geological Survey.

*Before fifth annual oil and gas conference, Pennsylvania State College, Pa., April 26, and Oil Institute, Titusville, Pa., May 2.

[3]Incidentally the geosynclinal axis of folding in the northern part of the Appalachian synclinorium does not correspond to the axis of maximum deposition. The axis of maximum deposition moved westward during Pennsylvanian time. Price has shown that the structural front corresponds to the thickest zone of sediments from at least early Devonian up to and including the Pottsville, but that the best development of the remainder of the Pennsylvanian and of the Permian sediments lies west of the structural front.

[4]Notes on deep sand production in New York are after D. H. Newland and C. A. Hartnagel, New York State Museum Bull. 295, 1932.

[5]Notes on Trenton and Medina of Ohio are after J. E. Billingsley. Occurrence of oil and gas in West Virginia, eastern Ohio and eastern Kentucky. Problems of petroleum geology, pp. 485-514, 1934.

rocks about 2,000 feet thick belonging to the Portage, Hamilton and Marcellus groups which are dominantly shales, but which include occasional thin, interbedded sandstones. Gas is encountered in these rocks at numerous localities along the shore of Lake Erie and in New York State and occasional "shows" of oil are reported, but substantial fields have not yet been developed in them.

The Exposed Rocks

The surface geology of a large part of northwestern Pennsylvania has not been studied in detail. The status of detailed geologic mapping[a] and of topographic mapping in that part of Pennsylvania is shown graphically by an index map on Figure 2. As a result of the lack of comprehensive geologic study much of the fundamental fact on which a discussion of the geology should be based has long been in controversy. It is not the purpose here to attempt a balanced geologic discussion, but rather to outline those features of the surface geology that may prove to be of particular use and interest in oil and gas exploration.

For our purposes the stratigraphy is perhaps best summarized by Figures 3 and 4. Figure 3 by a series of columnar sections shows the rock succession along the north and west edges of the area, and Figure 4 pictures the progressive change in the succession of the rocks as they are exposed along Allegheny River between the New York state line and Emlenton in southern Venango County.

An understanding of the surface stratigraphy as presented is essential in any effort to understand the geological structure of the region for here the details of their structure can be determined only by knowing the relation of the numerous horizons to each other, and by observing the difference in elevation of known horizons from place to place.

The surface structure may or may not prove to be economically important as a guide in prospecting the deep sands. In many of the oil and gas fields of Pennsylvania that produce from the "shallow" sands accumulation does not appear to be closely related either to surface or to subsurface structure. The gas fields of Tioga and Potter Counties in the Oriskany sand are, on the other hand, closely related to structure that, to an appreciable degree, can be recognized at the surface. In this respect then, the sands of the shallow zone and the sands of the deep zone may reasonably be expected to be unlike. If so, it is not economical to locate deep wells without first determining the well's position with respect to structure, for if a relationship between surface structure and accumulation can be established it may prove to be the means of greatly reducing exploration costs.

Stratigraphy

The key to stratigraphic succession in this region is shown in Figure 4, the dominant feature pictured being the unconformable relation that exists between the rocks of Pennsylvanian age and the rocks of Mississippian age. This is illustrated by the difference in degree of dip shown by the Olean and younger rocks when compared with the rocks below the Olean. The discordance is especially noticeable between Warren and Oil City; south of Oil City the two series are more nearly parallel in attitude. Further, as a result of pre-Pennsylvanian erosion the steeper dipping Mississippian beds have been truncated so that the Cuyahoga formation, for example, although several hundred feet thick at Tidioute, is but 20 feet thick at some localities near Warren, and the Shenango sandstone, the basal member of the Burgoon sandstone or Big Injun sand, does not appear in the river section north of Tidioute.

Moreover the regional dip being southeast, successively younger beds disappear below drainage in that direction. The Salamanca sandstone or Venango Second sand dips below drainage level just south of Tidioute; the Woodcock or First Venango disappears from the section just north of Tionesta; the Corry sandstone or Berea sand is exposed along the river almost to Franklin and the Shenango sandstone to Rockland.

These same features of the geology are illustrated in Figure 3. By comparing the Erie and Crawford County columnar section with the Warren columnar section, the effect of unconformity is apparent. In the Warren quadrangle the

(Continued on Page 38)

[a]Bradford and Brookville quadrangles after unpublished maps of Pa. Geol. Survey. New Castle quadrangle after Atlas 5 of Pa. Geo. Survey. Clarion quadrangle after Bull. 3, Pa. Geol. Survey Commission. Zelienople and Butler quadrangles after unpublished maps of U.S.G.S. Warren quadrangle after Folio 172, U.S.G.S. Foxburg quadrangle after Bull. 454, U.S.G.S. Kittanning and Rural Valley quadrangles after Bull. 279, U.S.G.S.

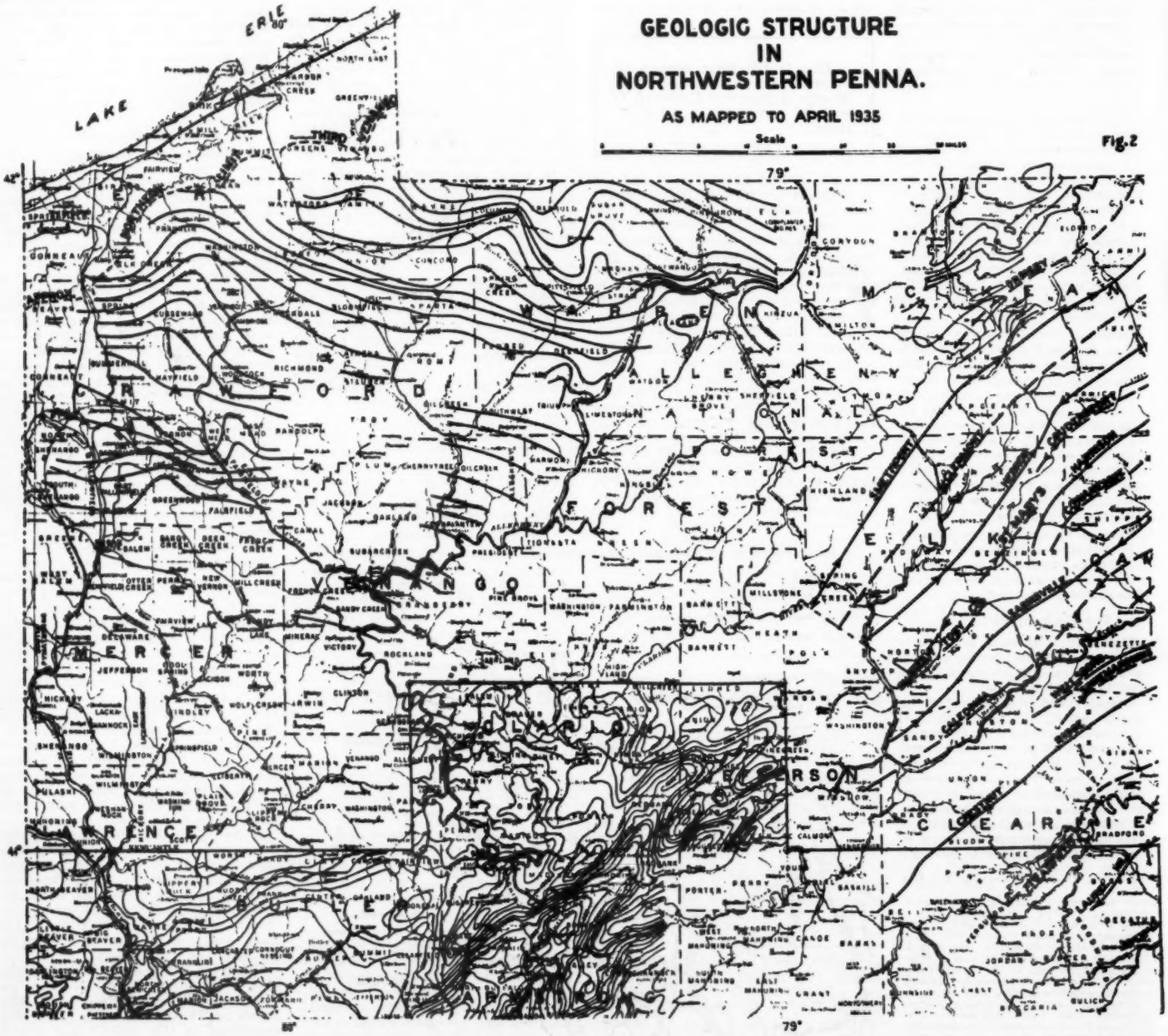


Fig. 2

Explanation: Contours in Crawford, Erie, Venango and Warren Counties on top of Corry (Berea) sandstone, except in Warren Quadrangle, after reconnaissance surveys. Contours in McKean County on top of Bradford third sand, after detailed survey. Contours on south edge of map converted to approximate top of Pottsville sandstone, after detailed surveys. Axes on east edge of map determined by strike and dip method. Mapping by U. S. Geological Survey and Pennsylvania Geological Survey.

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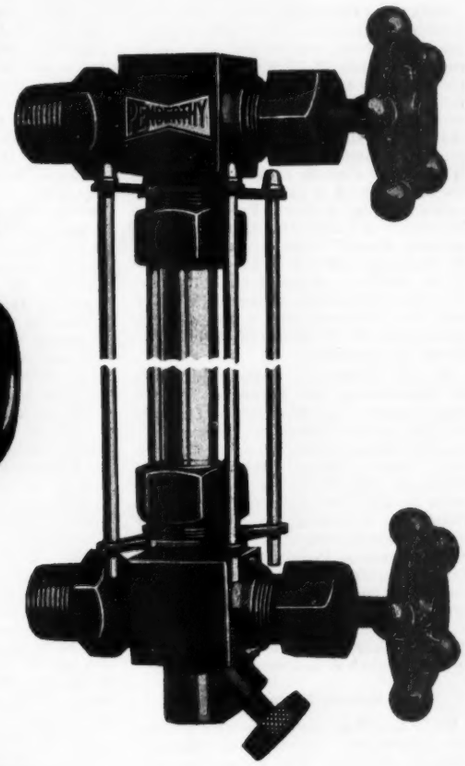

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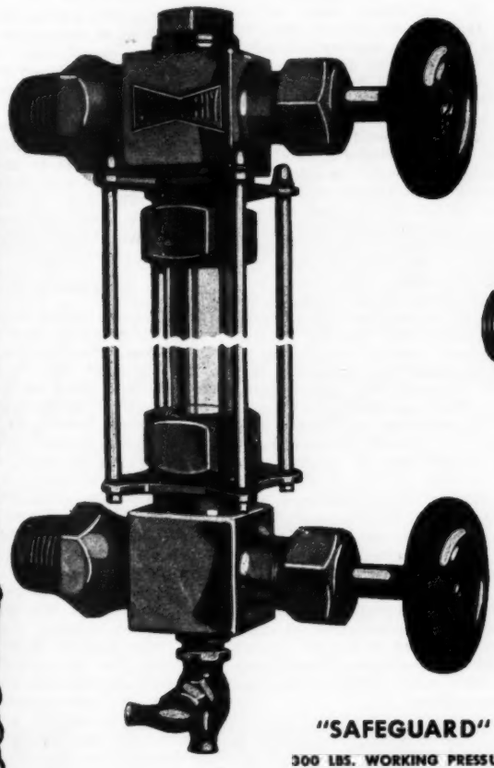

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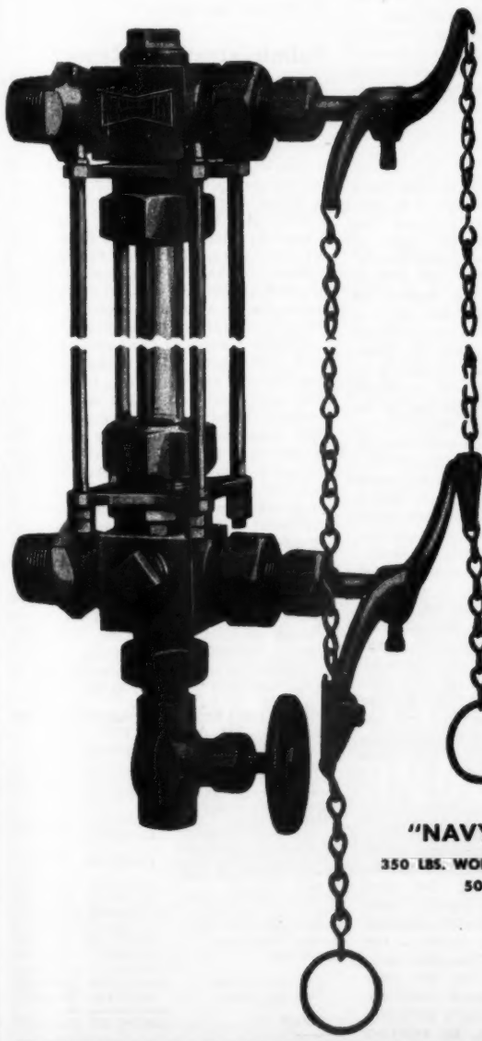

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Important Papers Are Presented at Pennsylvania State Conference

By R. C. CONINE

STATE COLLEGE, Pa., Apr. 27.—Producers attending the fifth Pennsylvania petroleum and natural gas conference here April 26-27 were given an opportunity to appraise the merits of solvent treating of lubricating oils made from grade crude as a response to the challenge of similarly processed materials produced outside of the region. D. B. Williams, of Carbide & Carbon Chemicals Corp., presented a paper on the "Application of the Chlorex Process to the Treatment of Lubricating Oils from Pennsylvania Crude," with discussions by P. M. Robinson, of the Pennzoil Co., and W. B. McCluer, of the Kendall Refining Co. John Dickinson, of the M. W. Kellogg Co., discussed phenol and propane as solvents. E. E. Bown, of Kendall Refining Co., presided.

In the production sessions "Methods of Determining the Saturation of Oil Sand Samples" was discussed by Dr. Earl S. Hill, research assistant, Mineral Industries Experiment Station, Pennsylvania State College; "Measurement of Fluids in the Petroleum Industry" by Allen D. MacLean, chief engineer of the Pittsburgh Equitable Meter Co.; "Oil and Gas Possibilities of the Deeper Sands in Northwestern Pennsylvania" by S. H. Cathcart, senior state geologist, Pennsylvania, and Dr. C. R. Fettke, head of the geology department of Carnegie Institute of Technology; "Problems of Flood Water Supply" by Arthur Simmons, of Torrey, Fralich & Simmons.

Solvent Extraction

There are 25 commercial solvent extraction plants with a combined charging capacity of 35,000 bbls. a day, he said. With domestic demand in 1934 estimated at 50,000 bbls., and a daily output of some 20,000 bbls. of solvent treated oil a day, the refiners who are solvent processing can supply 40 per cent of the domestic demand. Of particular bearing upon the outlook for Pennsylvania Grade crude oil producers was Mr. Williams' statement that "By means of solvent extraction it is possible for the Mid-Continent refiner to make an oil every bit as good as a conventional Pennsylvania lubricating oil, with higher yields and at a lower cost than he could with sulphuric acid treatment. In addition to this, acid sludge disposal, which has always been a problem, is eliminated."

By adopting solvent extraction, Mr. Williams said, "the Pennsylvania refiner can (1) effect a further improvement in viscosity index, a super-Pennsylvania oil in this respect; (2) by treating his residual stock, materially improve the carbon residue value and reduce carbon formation in the engine, heretofore the only point of criticism of a Pennsylvania oil, and (3) still further improve the stability and resistance to sludging and gum formation, which is desirable because of the severe conditions encountered in the modern automobile engine, and (4) he will keep a jump ahead of the Mid-Continent refiner and maintain his premium in the sale of Pennsylvania oils to the public.

Mr. Robinson stressed the fact that the small percentage of material removed in the extraction process while apparently negligible in quantity is responsible for sludge and carbon formation. He said the components eliminated are of far less value as lubricants than the poorest motor oils produced in the country. Mr. Robinson dwelt on the importance of calculating viscosity indices of oils below 50 S.U.S. for kinematic viscosity because viscosity index is considerably affected by viscosity. He said a "perfect" neutral oil would have a viscosity index of about 240, while a "perfect" bright stock would have a viscosity index of 160.

Mr. McClure said it is possible the Pennsylvania refiner may obtain results similar to those provided by solvent extraction by exploiting more advantageously the processes he now uses, vaporization, adsorption and crystallization. Economic considerations demand a more efficient solvent set-up for the Pennsylvania refiner than for the Mid-Continent operator, he said.

Mr. Dickinson's account of propane as a selective solvent included a number of striking facts . "Propane," he said, "owes its versatility as a solvent to the fact that its properties change very markedly over the temperature range between —44° F., when its vapor pressure is equivalent to atmospheric pressure, and 212.2° F., its critical temperature. At —44° F. wax is essentially insoluble, but the oil remains in solution. In the temperature range of 100° to 212° F., and under its vapor pressure, propane shows the surprising and novel property that instead of behaving like an ordinary liquid and dissolving more of any partially soluble substance as the temperature is raised, it actually dissolves less."

Mr. Dickinson said in closing that while it is well known Pennsylvania Grade refiners do not use sulphuric acid, or do so sparingly, because sludge separation is incomplete and the acid does not give the improvement obtained on more reactive oils, in propane solution, sulphuric acid works very well on Pennsylvania oils, small amounts of acid producing marked improvement in oil characteristics with high yields of treated product. Sludge separation is rapid and complete, with none of the difficulties usually encountered.

Oil Saturation

Discussing methods of determining oil saturation of sand samples, Doctor Hill listed the following classification according to their principal features: Distillation with retort operated at atmospheric pressure, or at reduced pressure; loss in weight due to heating and burning out the oil; extraction methods with (a) fractional distillation of the extract, (b) determination of the oil in the extract from its light absorption (calorimetric), (c) volumetric measurement of the oil in the extract, (d) loss in weight due to extraction of the oil.

Extraction with butyl alcohol in a Soxhlet, Doctor Hill said, is from the research standpoint the best direct method found to be useful as a check on the retort method. It requires longer time and more careful technique. The most reliable of the indirect methods is a loss in weight extraction test he described. "When a complete determination of oil, water, and porosity are required on a core," Doctor Hill said, "this method was the most satisfactory and gave all of these values on each sample. For the determination of all the above values, the method required no longer than the retort and has the advantage that all values are obtained on the same sample. Fewer assumptions were made in the determinations. The method will not give oil present in closed pores in the sand. The presence of carbonaceous materials insoluble in petroleum naphtha will not be determined as crude oil. The solvent used in the Soxhlet was a petroleum naphtha with a boiling point range of 190° to 238° F."

Doctor Hill pointed out that "from the standpoint of the operator who wishes to determine the oil content of the sand only in terms of barrels per acre, the retort is by far the most desirable method because the elapsed time for the determination is less than a tenth of that for an extraction determination. Consequently, the retort method must be thoroughly studied and its accuracy established for control work. The loss in weight extraction method is more desirable on new property where values for oil, water and porosity are desired."

Metering Devices

Theory and design of the various types of metering devices were outlined by Mr. MacLean. Touching briefly upon the "displacement" and "velocity" types of meters, he devoted his discussion largely to a resume of development of the "head" type meters "which do not depend on displacement in any form, but have a foundation in pure physics and mathematics." Recent investigations, Mr. MacLean said, have shown that "contrary to the supposition on which our past coefficients have been based, the law of geometric similarity does not apply exactly to flow measurement." A new formula for the actual discharge coefficient has been evolved and will be published soon with a new table of coefficients which take into account both diameter ratio and pipe size. In analyzing all available authentic experimental results, the speaker said, the investigators have followed the Reynolds number method, a factor obtained by multiplying the velocity of the fluid at the time of measurement by the diameter of the orifice and by the density of the gas and dividing this product by the absolute viscosity.

A comprehensive survey of the geology and possibility of deep sand oil and gas production in northwestern Pennsylvania was presented in the paper by Mr. Cathcart and Doctor Fettke.

Flood Water

Characteristics of flooding water as a source of trouble in the Bradford Field, and decreasing supply, were covered by Mr. Simmons. Plugging of the two-thousandths of an inch and smaller pores of the oil bearing sand by rust, organic and other foreign matter presents the most important problem. Filtration partly eliminates this hazard, but the solution is not complete without stabilization of the water (with lime), aeration, chlorination and deaeration. By aeration to precipitate soluble iron and filtration with rapid sand pressure filters the most serious cases of well plugging have been eliminated. An undesirable phase of this practice is the resulting of high oxygen content of the water which increases its corrosiveness. Operations for flood water treatment were commented upon as follows:

A small amount of aeration is probably more injurious than complete aeration as the soluble iron, only partly removed, may have a tendency to drop out in the pipe lines or the sand. Organic growths found in the Bradford Field can be eliminated with heavy dosage of chlorine or with dilute copper sulphate solution. Chemical means of inhibiting corrosion, or, here, water stabilization, operate by forming a protective coating on pipe. Lime is used with an arrangement whereby the water will percolate through chambers filled with marble chips suggested. Improper backwashing and incomplete coagulation were the two principal causes for improperly working filters. Mechanical deaeration and chemical deactivation to avoid troubles caused by oxygen in the water is indicated in cases of corrosion. The need for secondary filtration cannot be ascertained until more data are available.

In discussing possible shortage of flood water in the Bradford Field, Mr. Simmons said at the present rate of oil production some 15,000,000 gallons of water were used every day.

George E. Walker, president of the United Natural Gas Co., presided at the production sessions. The conference was sponsored by the Pennsylvania Grade Crude Oil Association, Bradford District Pennsylvania Oil Producers Association, Pennsylvania Topographic and Geological Survey, Pennsylvania Natural Gas Men's Association, and the Petroleum and Natural Gas Advisory Boards of the School of Mineral Industries.

Administrator's Report on Crude Oil Stocks

WASHINGTON, D. C., Apr. 29.—Stocks of domestic and foreign crude petroleum at the close of the week ended April 20 totaled 324,373,000 bbls., according to data compiled by the Bureau of Mines, Department of the Interior, for Petroleum Administrator Harold L. Ickes. In comparison with data for the previous week, this total represents an increase of 84,000 bbls., comprising an increase of 236,000 bbls. in stocks of domestic crude oil and a decrease of 152,000 bbls. in foreign crude stocks.

Current reports of the industry for the week ended April 20, in comparison with those for the previous week, indicate that both crude oil production and imports declined slightly, but that crude runs to stills registered a moderate gain. The approximate daily average production for the week ended April 20 was 2,620,000 bbls., or 5,000 bbls. below the level of the previous week. This decline could be attributed to a decrease in estimated hot-oil production from about 30,000 bbls. daily during the week ended April 13 to 16,000 bbls. daily for last week. The estimated daily average balance of crude oil for the week ended April 20 was as follows (bbls.): Production, 2,620,000; imports, 83,000; equals runs to stills, 2,535,000; increase in stocks, 12,000; exports, fuel and losses, 156,000.

STOCKS OF CRUDE PETROLEUM, APRIL 13 AND 20, 1935

(Barrels of 42 gallons)

Grade of crude oil—	Apr. 13	Apr. 20
Pennsylvania Grade ..	4,526,000	4,575,000
Other Appalachian ...	885,000	928,000
Lima-N.E. Indiana-Michigan	1,238,000	1,248,000
Illinois-S.W. Indiana .	11,501,000	11,569,000
N. Louisiana and Arkansas	10,047,000	10,061,000
West Texas and S.E. New Mexico	31,269,000	31,242,000
East Texas	30,275,000	31,302,000
Other Mid-Continent ..	148,552,000	147,877,000
Gulf Coast	20,893,000	20,774,000
Rocky Mountain	27,637,000	27,613,000
California	33,528,000	33,285,000
Domestic crude	320,341,000	320,577,000
Foreign crude	3,948,000	3,796,000
Total*	324,289,000	324,373,000

*Represents approximately 98 per cent of total stocks in the United States, exclusive of producers' stocks.

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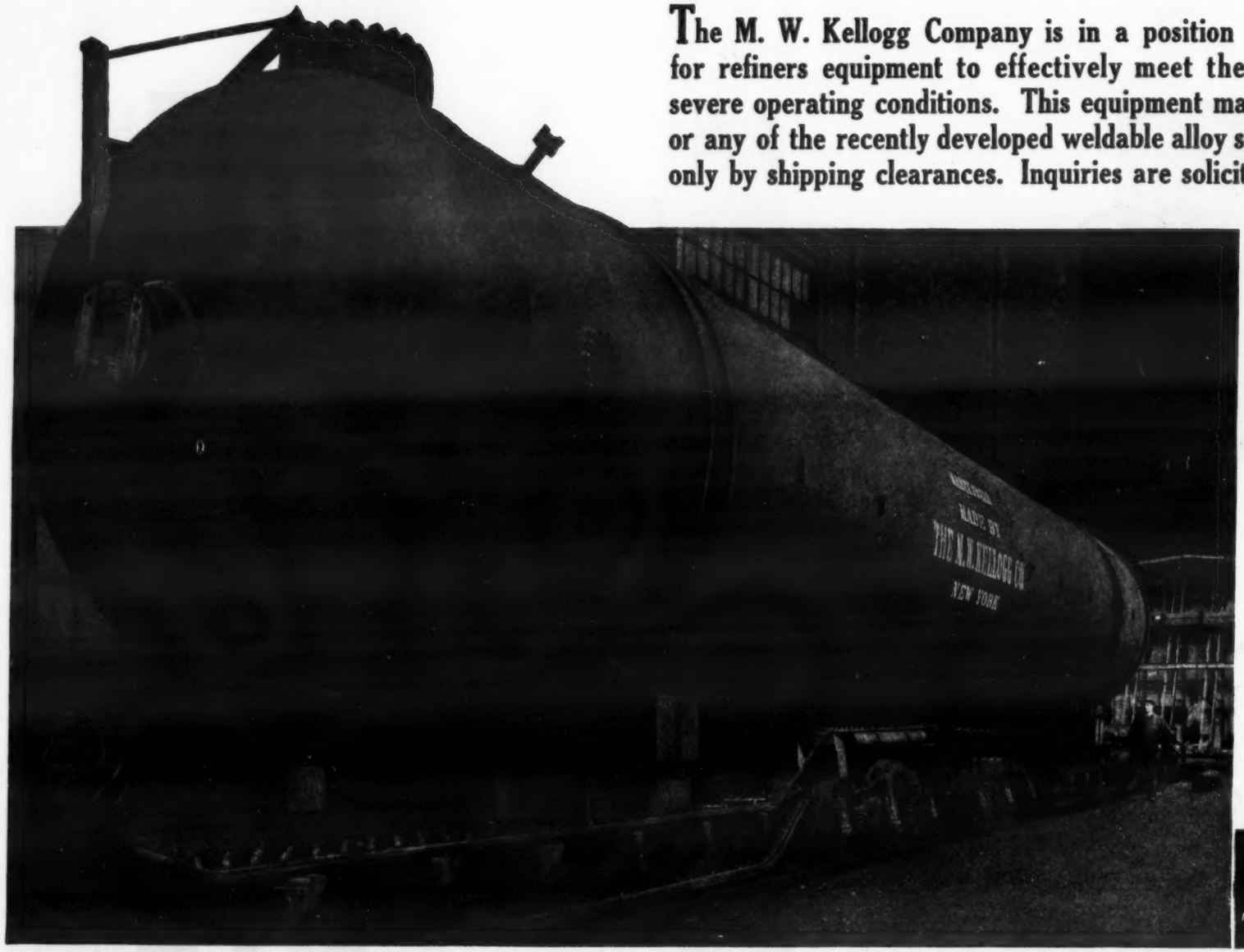

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NEWS FROM FOREIGN LANDS

GREAT BRITAIN

Changes in marketing policy have been made in operations of two important American controlled companies operating in Great Britain over the past month. The Anglo-American Oil Co., Ltd. (Standard Oil Co. of New Jersey) has announced that the trade name of Pratts which has been associated with the Standard's marketing operations in Great Britain for 50 years will be dropped and Esso substituted. The latter is the same as used in the United States and is said to mark the start of a program in which the Esso trade name will be used wherever possible in all the company's foreign operations. The newly named products include Esso Ethyl and Esso High Test motor fuels, replacing Pratts Ethyl and Pratts High Test.

The Vacuum Oil Co., Inc., subsidiary of the Socony-Vacuum Oil Co., Inc., is now introducing its new line of "Mobil-oil" made by the Clearsol process. This follows similar action in the United States last year. The oils are solvent refined. It is reported that the company plans to install the process at three of its European refineries.

U. S. S. R.

All phases of oil operations in the U. S.S.R. are on practically the same basis as in 1934 on detailed reports covering developments for the first two months as shown in the accompanying table. Calculated in barrels daily the production in February averaged 453,700 bbls. and 446,100 bbls. in February, 1934.

Among the individual trusts, Maineft showed a gain of over 50 per cent for the first two months of this year. Azneft, the principal producing trust, showed a gain of 7 per cent with substantial losses by Grozneft and Embaneft. Some of the smaller trusts reported substantial gains.

In the matter of drilling there was a large increase by Embaneft and a smaller increase by Azneft. February drilling showed a substantial increase over January when drilling activities were exceptionally low. Wildcat drilling around which the U.S.S.R. hopes to greatly increase its present crude oil production is running ahead of last year by 40 per cent with more extension drilling in proven pools. Drilling in the proven areas is less than last year.

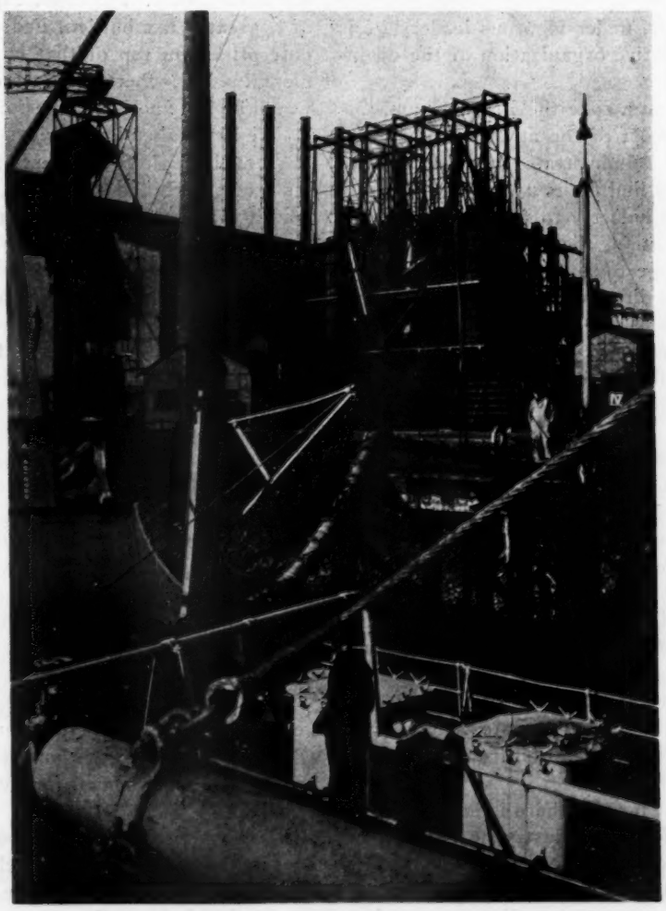
Refinery operations based on crude oil runs to stills are only 3 per cent greater than the first two months of 1934, but gasoline production increased 12 per cent reflecting the increased cracking facilities. The gasoline yields of the U.S.S.R. refineries are still relatively low when compared with yields in most of the other oil refining countries.

In the gasoline end the increased production of Aviafuel is outstanding with a gain of over 400 per cent for the first two months. The Grozneft continues to account for more than 50 per cent of the gasoline production being much larger than Azneft although the latter's operations account for more than 70 per cent of the crude oil runs to stills.

The 1935 data show that the oil administration of the government has greatly reduced its production quotas for the year which were a part of the second five-year plan. Originally it had been hoped that 1935 would see a large increase in crude oil production which was to be more than 50 per cent greater than in 1933. Refinery operations were to be expanded to take care of this increased crude production which was to be obtained largely through the development of new fields. The oil administration before the end of 1934 found that it could not carry out this plan in 1935 due partially to a lack of equipment and reduced its quotas. As a result the crude oil production and the drilling activities for the first two months were about 90 per cent of the plan with refinery operations 96 per cent and gasoline production 100 per cent.

PRELIMINARY FIGURES FOR FEBRUARY, 1935, AND REVISED FIGURES FOR JANUARY, 1935, COVERING OIL OPERATIONS IN U.S.S.R.

	February, 1935	% of plan	January, 1935	February, 1934	1935 % of 1934
Production of Crude Oil					
Azneft	1,461,000	91 5	1,543,300	1,368,400	106.8
Grozneft	211,700	84.0	214,400	315,300	67 1
Maineft	86,200	93 3	99,200	56,100	153.7
Embaneft	14,700	77 4	15,700	18,800	78.2
Other trusts	41,300	83 4	35,100	25,800	160 1
Total	1,814,900	90.3	1,907,700	1,784,400	101.7
Drilling (in Meters)					
Azneft	73,217	101.2	43,304	62,118	117.9
Grozneft	14,626	78 3	11,756	22,614	64 7
Maineft	3,102	55 1	3,785	3,752	82.7
Embaneft	3,225	113.9	2,410	1,475	218 6
Other trusts	7,207	77.8	3,822	7,613	94.7
Total	101,377	93 2	75,078	97,572	103.9
Consisting of:					
Production drilling	70,534	101 4	53,608	73,180	96 4
Extension tests in producing fields	17,710	78 7	14,223	14,979	118 2
In new areas	13,133	78 6	7,247	9,413	139.5
Runs to Stills					
Azneft	1,025,600	98.9	1,120,000	1,018,300	100.7
Grozneft	514,600	93.4	489,400	475,600	108.2
Aviafuel	14,300	57.4	16,200	17,400	82.2
Sredazneft	4,000	76 9	3,500	3,000	133.3
Total	1,558,500	96 3	1,629,100	1,514,300	102 9
Production of Gasoline					
Azneft	88,300	99.2	94,100	82,900	106.5
Grozneft	119,500	100.2	118,000	126,200	94.7
Aviafuel	9,700	121.9	6,550	2,300	421 7
Sredazneft	420	70 0	330	260	161 5
Deduct inter-refinery transfers	1,200	....	2,100	17,600	....
Total	216,720	100 7	216,880	194,060	111.7



View of refinery and tanker loading facilities of Rhenania-Ossag Mineralolwerke A. G. (Shell) at Harburg-Wilhelmsburg, Germany

FRANCE

The bulk of the crude oil now being refined at plants in France is coming from Iraq, according to recent reports of the French government. The government report shows that out of a total of 337,900 tons of crude oil imported into France in February, 211,000 tons came from Iraq.

This large gain in Iraq imports, which were not a factor in the French market until last fall, has necessarily brought large reductions in imports of crude oil from other countries. For example, the crude oil imports from the United States for the first two months dropped to 151,000 tons from 188,000 tons for the same period in 1934. Venezuelan imports dropped from 146,000 to 64,000 tons, Peru from 61,000 to 34,000 tons, and Persia from 57,000 to 20,000 tons. Imports from Russia and the Dutch East Indies also declined.

Reports show that a majority of the refineries in France are now using Iraq crude oil for at least part of their requirements. This includes companies which are part owners of the Iraq Petroleum Co., Ltd., owners of the Iraq production. This company is owned equally by French interests, Anglo-Persian, Royal Dutch-Shell and the American group, which now consists of the Standard Oil Co. of New Jersey and the Socony-Vacuum Oil Co., Inc. All these companies have one or more refineries in France and to take care of the Iraq production it has been necessary to reduce shipments from other countries. In at least two cases this situation has been responsible for decreased crude oil production in the countries from which the crude oil supplies formerly were obtained.

The imports into France for the first two months of 1935 and 1934 were as follows (data in tons):

	1935	1934
Crude oil	741,150	595,300
Gasoline	104,400	212,600
Fuel oil	65,700	46,700
Gas oil	29,500	62,700
Lubricating oil	16,600	26,300
Kerosene	2,950	10,500

GERMANY

The Ministry of Economics in Germany has approved a plan to greatly increase prospecting for new oil fields. This plan has been under consideration for some time and the details have been worked out by government geologists. Some of the drilling will be done by the government and other through government aid to private operators. It was pointed out that an increase in crude oil production is especially needed at this time to help bring about a better balance of trade. At the present time approximately two-thirds of the petroleum products consumed in Germany are imported. The government is also sponsoring the expansion of hydrogenation facilities in which coal is used.

Imports of petroleum products into Germany for the first two months of this year were as follows (data in tons):

	Jan.-Feb.	
	1935	1934
Crude oil	12,330	36,139
Gasoline	150,804	149,471
Kerosene	20,207	24,766
Gas oil	97,492	69,300
Lubricating oil	69,747	46,043
Fuel oil	46,333	23,096

The crude oil production of the Hanigsen-Obershagen-Nienhagen area, the principal crude oil producing section of Germany, increased from 23,910 tons for the first two months of 1934 to 32,666 tons for the same period in 1934.

THE OIL AND GAS JOURNAL

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Look Both Ways

The American Petroleum Institute, under vigorous leadership, is taking its full place as the representative organization of the oil industry.

Since the formation of the petroleum code the Planning and Coordination Committee has received most of the attention of the industry but its uncertain status under Administrator Ickes' ruling reducing it to merely advisory functions limited its usefulness.

When it became necessary for the industry to speak out, as President Byles did at the Drake dedication, the Institute assumed a necessary leadership beyond the scope of a merely advisory body. The call for a special meeting of the directors at Chicago May 3 to draft a petition to Congress demanding the restoration of self-government to the industry is a logical sequence.

The present condition of the industry gives pertinence to the demand. It now has a definite program to continue toward stabilization.

Sufficient progress has been made by the oil producing states to assure an interstate compact as soon as Congress approves it.

Authorization of the Bureau of Mines to compile estimates of consumption as a basis for production, continued control of imports, and of interstate traffic under the Connally law, is all the legislation that is needed.

If Congress goes beyond that it will embark upon an ocean of difficulties. It will plunge the industry again into the whirlpool of uncertainty from which it is now emerging. It must inevitably revive constitutional and legal doubts about the extension of Federal control to production within the states and the ultimate reduction of the industry to the status of governmental operation from the well to the pump, price fixing and all.

America is not prepared to go that far, for there is no doubt that if such a precedent could be set up for one industry no industry or business could be safe from similar regimentation.

It is this conviction that is causing this meeting of the directors of the American Petroleum Institute to protest to Congress against further Federal encroachment upon the oil industry.

More than a formal petition of protest will be necessary. It should be accompanied by vigorous action. Every member of Congress should be informed of the situation and its momentous possibilities. The Institute should take steps to thoroughly acquaint every oil man with its position and assure a united front on the part of the industry.

As Will Rogers said Sunday night, when approaching a crossing it is wise to stop and look—both ways. We have all been looking only one way, as we did in 1929.

Priming the Pump

For two years the stock answer to every criticism of the New Deal has been: "Well, what's your alternative?"

The National Association of Manufacturers now comes back with a definite proposition, the announcement that close to 20 billion dollars in expenditures which would give employment to 4 million men for two years is pent up in the field of factory expansion, renovation and rehabilitation alone.

The release of this flow of private capital by removing political uncertainties, the association says, would dwarf the billions appropriated by Congress for relief and make unnecessary the expenditure of the taxpayers' money.

This offers a clear cut choice between throwing nearly 5 billions more of the taxpayers' money into the bottomless pit of relief works with no assurance that other billions may not have to follow, and the actual resumption of business in the ordinary way of supplying demand.

There is no question about the size of the demand. For more than five years the American people have been going without things they needed. Industry and business have been likewise held back on replacements and improvements by that lack of popular consumption in goods and services.

Conditions have improved but not at the rate expected. Recovery has been spotty. Increased expenses and heavier taxation, and fear of a greater tax burden, Federal, state and local, have discouraged enterprise. On top of that has been the uncertainty as to governmental policy, whether we were not headed for a nationalization that would be but another name for socialism.

We have taken long strides in that direction in the past two years. It seemed simple for Uncle Sam to go into this or into that, to lend his credit here and there, but it is easier to get into these things than it is to get out. It is too much like scrambling eggs.

This has become increasingly evident as time went on. Extreme experiments that were accepted in the emergency are not being modified or abandoned. They are being extended and expanded. The multiplication of Federal employes and bureaus threatens to become a plague. The taxpayer has to turn over so much of his earnings that he too spends much of his time working for the government. How far have we already strayed from the American ideal of government as the servant, not the master, of democracy.

It is this apprehension that is damming back that flow of 20 billion dollars for needed replacements. The prime necessity of the hour is a feeling of security that will encourage enterprise, that will stimulate men to plan for the future rather than limiting themselves to mere existence—marking time.

We have tried pouring billions into relief in the hope of "priming the pump" of industry. But it cannot be continued indefinitely. It is doubly dangerous, by sapping self-reliance and by deterring investment.

Let us try something else. The manufacturers' association suggestion is that we quit governmental tinkering with business right where we are and give business a chance to spend that 20 billion and provide employment for those 4 million unemployed for the next two years.

It seems worth trying. Even that 5 billion works relief program does not hope to offer that much employment. And, if it did, it would be infinitely better to have the employment provided by genuine recovery than by spending tax money. That 20 billion dollars worth of business would be real priming for the pump.

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THE continued demand for TRANSIT TONGS by the oil and gas industries during the past forty-five years is the best proof of their excellence.

They won their place through merit, and have held it against all the imitations.

The only genuine Klein Tongs are made today by us, just as we made them forty-five years ago.

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Pratt-Gilbert Co.
Phoenix,
Arizona

Frick-Reid Supply Corp.
108 N. Trenton Ave.
Tulsa, Oklahoma

Late Fields

KANSAS

Hartman & Blair's No. 1 Roebach, in Section 2-14-15w, Russell County, flowed 1,800 bbls. of oil in 6½ hours on Monday. The oil tests 38 gravity. This well produces from Topeka lime. This formation is of the Shawnee group of the Virgil series of Pennsylvanian age and in type section has been found to be approximately 30 feet thick. It is probable that any production found in this limestone formation would be contained in the Hartford member which in at least one observed instance has been found to be 20 feet thick and is described as blue gray massive limestone, weathering brown, separated by shale beds. The Sheldon limestone of Condra is an algal-molluscan bed believed to belong at the top of this member.

Keith's No. 2 Volkland, in Section 20-19-9w, Rice County, pumped 487 bbls. in 24 hours and was then given a 1,000-gallon acid treatment.

OKLAHOMA

Six new wells were brought in over the week-end in the rapidly growing Fitts Pool in Pontotoc County, including E. H. Moore and others' No. 2 Craddock, 1,028 bbls. in three hours; No. 3 Craddock, 739 bbls. in two hours, and No. 4 Craddock, 655 bbls. in three hours. The lease is in the SW Section 29-2-7; and same operators' No. 2 Smith, in NE NW NW Section 31-2-7, production not available; Carter Oil Co.'s No. 9 Richards, in SE Section 30-2-7, 603 bbls. in 2½ hours, and No. 2 Smith, in NE Section 31-2-7, 814 bbls. in two hours. Carter Oil Co. was washing in No. 12 Richards, SE Section 30-2-7, after running tubing. The gauges given above were all through casing. Sand records were not yet available.

Continental Oil Co. has made a location for No. 1 Hildreth, SE SE SW Section 22-15-3w, Logan County, a half mile east of Sinclair Prairie Oil Co.'s No. 1 Koetsch, which appears to have opened a pool south of Guthrie. The Continental lease expires in June. Gypsy Oil Co. also has a lease in the neighborhood that expires in a short time.

NORTH TEXAS

FORT WORTH, Tex., Apr. 30.—Reports state Ireland Oil & Gas Co.'s No. 1 George L. Doyle, L. Adams Survey, Hamilton County, about 15 miles southeast of Hamilton and near the Coryell County line, had a showing of gas at 3,150 feet and is bailing high gravity oil from black lime logged at 3,330-32 feet.

C. F. COMSTOCK DIES

Charles F. Comstock, 60 years old, and a resident of Oklahoma since 1908, died Saturday of a heart attack. He was gas superintendent of the Pure Oil Co..

Born in Ilion, N. Y., in 1875, he came to Nowata in 1908 and was connected with the Hartman & Thompson Oil Co. He moved to Tulsa in 1918 with Oklahoma Producing & Refining Co. and joined the Pure when the firms were merged.

W. H. DODD DIES

William H. Dodd, 86, died at his home in San Luis Obispo, Calif., last week. He was for 20 years geologist for the J. A. Hull Oil Co. He retired three years ago. He was born in East Almond, N. Y. He represented an oil syndicate in South America at one time.

CONSOLIDATED BOND ISSUE

A special meeting of the stockholders of the Consolidated Oil Corp. is to be held June 4 for the purpose of authorizing a new bond issue of $50,000,000 for refunding purposes.

EDWARD WINDER DIES

PETROLIA, Ontario, Apr. 27.—Edward Winder died here recently following an accident. He was 63 years of age and for the past 18 years connected with the J. & J. Kerr Co., oil producers.

Trading in Crude Oils and Gasoline Futures on the Commodity Exchange

NEW YORK, Apr. 29.—Following is a summary of trading in crude oil and gasoline futures on the Commodity Exchange during the week ending April 27:

Gasoline Futures

Gasoline futures on Commodity Exchange, Inc., were unchanged to 3 points lower in the nearby positions, while the far-forward deliveries were 1 to 4 points higher. This is the third successive week that the price of the nearby deliveries has shown a tendency to decline, while the far-forward positions have been steadily advancing. During the past week, the volume of trading showed an increase over the previous week, with sales totaling 3,276,000 gallons. By far the largest portion of this total, namely, 2,730,000 gallons, was transacted in the July and September deliveries. The July delivery sold at a high of 5.98 cents and a low of 5.93 cents, and the September position at a high of 6.13 cents and a low of 6.10 cents per gallon (federal tax included).

Crude Oil Futures

Crude oil futures on Commodity Exchange, Inc., were one-half cent higher in all deliveries, with the exception of August, which showed a decline of one-half cent. The market displayed a steady trend throughout the week despite the fact no sales were recorded.

GASOLINE

	Close	High for week	Low for week	Sales (gallons)
June	5.85B	5.93	5.90	210,000
July	5.92B	5.98	5.93	1,344,000
Aug.	5.98B	....	....	.....
Sept.	6.07B	6.13	6.10	1,386,000
Oct.	6.19B	....	....	.....
Nov.	6.19B	....	....	.....
Dec.	6.26N	6.30	6.24	336,000
Jan.	6.28N	....	....	.....
Feb.	6.30N	....	....	.....
Mar.	6.32N	....	....	.....
Total				3,276,000

The above prices for future delivery of gasoline are ex-licensed tanks in delivery areas and include 1 cent per gallon federal tax.

CRUDE OIL

	Close	High for week	Low for week	Sales (barrels)
June	1.19½N	....	....	.....
July	1.20½N	....	....	.....
Aug.	1.20½N	....	....	.....
Sept.	1.22 N	....	....	.....
Oct.	1.22½N	....	....	.....
Nov.	1.23 N	....	....	.....
Dec.	1.23½N	....	....	.....
Jan.	1.24 N	....	....	.....
Feb.	1.24½N	....	....	.....
Mar.	1.25 N	....	....	.....

B—bid. N—nominal.

Gasoline trading in 1,000-bbl. units. Quotations for basis grade U. S. Motor, 55-59 octane, deliverable from Exchange licensed storage in Houston-Galveston, Texas, area.

Crude oil trading in 2,000-bbl. units. Quotations for basis grade Oklahoma-Kansas, 36-36.9 gravity legally produced oil, deliverable from Exchange licensed storage in Houston-Galveston area and Cushing-Drumright, Oklahoma, area. Other grades of gasoline and crude deliverable subject to premiums and/or discounts as set forth in Exchange by-laws. Gasoline prices include 1-cent federal tax.

Gas Company's Contract Canceled by Stanolind

It is reported in Denver and other centers in the Rocky Mountain Field that the Stanolind Pipe Line Co. will place in operation as an oil line as soon as possible the old Mammoth Pipe Line Co.'s line from Salt Creek, Wyo., to Freeman, Mo.

In 1931 the company leased 187 miles of the line to the North Central Gas Co. for a part of its system from Big Sand Draw, Wyo. to Western Nebraska cities and towns. The lease required 18 months' notice before it could be cancelled. The Stanolind company about six months ago gave such notice and the lease will expire May 31, 1936.

At the headquarters of the Stanolind Pipe Line Co. in Tulsa it was learned that the company has made no definite plans as to what use will be made of the line when the gas company's contract expires. The Stanolind organization has about 12,000,000 bbls. of crude oil in storage in Wyoming which would be made available to Standard of Indiana refineries in Missouri and Indiana a year hence.

A dispatch from Scotta Bluff, Neb., says the North Central Gas Co. is acquiring rights of way for a line from Glenda, Wyo. to Bridgeport, Neb., and will start laying line after the grain harvest days to take the place of the Stanolind's line above referred to.

DEATH OF O. K. WING

O. K. Wing, of Bartlesville, Okla., secretary and treasurer of the Phillips Petroleum Co., died on Wednesday, April 24, in a Tulsa hospital of a complication of diseases. He was 42 years old.

Mr. Wing was born in Cooper County, Mo. He came to Oklahoma in 1916 entering the employ of the Empire Companies, but joined the Phillips Petroleum Co. the following year. Shortly afterward he joined the United States forces engaged in the World War and after being discharged from the service returned to the Phillips Petroleum Co. He began as an accountant but was advanced to assistant secretary, auditor, comptroller and then secretary and treasurer and director. He was also a director in the First National Bank of Bartlesville.

Barnsdall Decides to Be Strictly Producing Unit

Taking cognizance of the fact refining and marketing operations of its subsidiaries have not been profitable, directors of the Barnsdall Corp. and Barnsdall Oil Co. decided April 26 to confine the activities of the corporation to those of a producing company and to divorce the refining and marketing operations, forming a separate company to carry on this business. Should the separate company determine the refining and marketing operations cannot be continued at a profit, the assets of the new company will be liquidated and converted into cash.

In a statement to stockholders on the action of the directors, E. B. Reeser, president of the Barnsdall Corp., said in part:

"The board of directors determined to segregate in a new company, to be known as Barnsdall Refining Corp., the three refineries and all of the marketing units heretofore owned by your corporation's subsidiary, Barnsdall Oil Co., as of May 31, 1935. The new company will have a substantial surplus of quick assets over current liabilities, which should provide it sufficient working capital to allow it to function until it can be determined whether prices of refined products to the consumer will be raised sufficiently to allow the refineries and marketing units to operate at a profit. If conditions do not improve, the assets of the new company can be liquidated and converted into cash. And in any event, the operations of the refineries and marketing units will not interfere with profits to the stockholders of Barnsdall Corp. from current production and sale of crude oil.

"The new company has purchased the refining and marketing properties by the issuance of ten-year, 4 per cent income bonds, preferred and common stock and notes for the indebtedness incurred since January 1, 1935. Details cannot be furnished until after the effective date of May 31, 1935.

"The entire common stock of the new company will be distributed as a liquidating dividend out of capital surplus, to stockholders of Barnsdall Corp., distributable at an early date."

Texas House Passes Bill for Regulating Utilities

AUSTIN, Tex., Apr. 29.—The Texas house late Monday voted final passage, 110 to 19, of Governor James V. Allred's bill to create a state utilities commission and provide state regulation of gas, electric, telephone and other utilities, and limit the return of utilities to 8 per cent of actual investment. The measure was sent to the senate, with indications of final action before adjournment. The bill levies a small gross receipts tax for administration.

The senate received itemization of Railroad Commission and attorney general's department salary lists to be maintained on the increase of the oil tax for administration to three-sixteenths of a cent per barrel. The bill is still to be voted on in the senate.

Governor Allred expressed confidence Monday the gas pipe line bill for a state-profit line, federally financed from the Panhandle to Detroit, will be voted finally before adjournment.

MAY LIMIT STRIPPING

AUSTIN, Tex., Apr. 30.—Final legislative action was taken Tuesday sending to Governor Allred the Stanfield-Small bill for absolute limitation of sweet gas to light and fuel purposes, providing the same machinery as in oil conservation for the ratable production of gas, limiting stripping and carbon black manufacture to sour gas.

GOOD WELL IN PANHANDLE

AMARILLO, Tex., Apr. 29.—Hanlon-Buchanan, Inc., and Smith Brothers Refining Co.'s No. 1 Sitter, W half NE Section 33-24, of the H.&G.N. Survey of Wheeler County, Texas, produced 5,574 bbls. of crude during the first 24-hour test by the Railroad Commission and showed a steadily increasing flow. This is the largest Wheeler County completion for many months. The Texas Pipe Line Co. will lay a pipe line to the well and will take the production.

Pipe Line Construction

Stanolind Reconditioning Line in Northeast Texas

FORT WORTH, Tex., Apr. 29.—The Stanolind Pipe Line Co. has started a reconditioning program in Texas and is working on its 8-inch line from Ranger in Eastland County, to Graford Station in northeast Palo Pinto County. This line is 45 miles long and carries oil from the old Ranger and Eastland County fields northeast to Graford Station, which is on the company's Mid-Continent-Gulf Coast trunk line system.

Crude from the Ranger district does not contain a sulphur content such as West Texas and Panhandle crude therefore most of the corrosion to the pipe has been caused by outside elements such as alkaline and acid soils and electrolysis. Just how much line is to be reconditioned by the company is not known at this time, but after this job is completed other lines in the system are expected to be gone over. However, during the past three years the company has reconditioned much of its pipe from Graford south to the Gulf Coast, and that line will perhaps not be touched at this time.

MISSISSIPPI GAS LINE

Municipal Service Co. of Kansas City, Mo., plans a 6-inch gas line from the Jackson gas field to Canton, Miss., 25 or 30 miles. A PWA appropriation of $190,000 is expected to pay for the line. About 200 connections will be made at Canton. That municipality owns two gassers in the Jackson Field.

INDIANA GAS LINE

Kenutcky Natural Gas Co. is laying a 10-mile 6-inch extension to the Oaktown, Ind., gas field which the Gardner Petroleum Co. of Tulsa recently opened.

Gallons and price

When a Dubbs unit starts up in the plant of a new Dubbs licensee, his gallonage starts up too—and keeps going—and he doesn't have to cut the price

Motorists like Dubbscracked gasoline because it gives more miles to the gallon—without knocking You can always get the price for it There is never enough to go around

When you put in a Dubbs unit you make it hard for anybody to sell poor gasoline in your territory

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

Group 3 Market Vigorous on an Unusual Number of Fronts, With Gasoline Still Making Gains

By T. F. SMILEY

Not often does the market in petroleum products present an aggressive attitude on so many different fronts as it has done this week. Refinery gasoline, natural gasoline, kerosene, tractor fuels, gas oil—all were in vigorous demand; and in some other divisions, where discouragement had prevailed, there was a more hopeful feeling.

Although tank car prices of gasoline underwent little or no change, the market was said to be gaining firmness, with likelihood of continuing the advance which it began in late February.

Resumptions Cause Brief Uneasiness

News that 11 plants in East Texas, previously shut down, had resumed operation late last week, all but one of them running on illegal crude, caused a bit of uneasiness, but no material softening of the market. Disquiet over their action was of short duration, for the state attorney general's department and the State Railroad Commission promptly cracked down on the insurgents, closing one plant after another until on Monday of this week there were said to be only two operating on unlawful crude, and the future course of these two was conjectural.

The refineries which had their few hours of "hot" oil adventure were said to have been among those commonly characterized as "truck plants." These plants in recent months have disposed of enormous quantities of illicit gasoline through fleets of trucks which carried it to consuming areas inside the State, keeping out of the clutches of both the federal and the state tender boards.

Twenty-nine refiners in East Texas are subjects of injunction-receivership or contempt proceedings filed in the State District Court for the alleged running of illegal crude. Some of the plants are padlocked by court order.

Refined Oil Market Barometer

Motor fuel held its ground in all areas in the last week and fresh strength appeared in other divisions of the market, notably natural gasoline, kerosene, tractor fuels and gas oil. Inter-refinery buying is helping to keep the gasoline market fairly well stabilized, and this, along with more favorable motoring weather, is expected to prevent any interruption of consequence in the advance now under way. Bright stocks and steam-refined stocks lack strength.

Mid-Continent—Gasoline, natural gasoline, kerosene, high-gravity distillates and gas oil strong. Little change otherwise.

East Coast—Gasoline gaining strength. Kerosene and furnace oil slow. Bright and steam-refined stocks dull.

Gulf Coast—Gasoline tighter. Kerosene improved. Fuels moving readily. Lubricants slowest division.

Pennsylvania—Gasoline continues strong. Price increases likely. Rest of market unchanged.

California—General market firmer. Diesel and fuel oil strong.

Chicago—Gasoline firm. Kerosene active and steady.

East Texas plants operating on lawful crude were holding their low octane motor fuel at 4⅜ cents (resale) f.o.b. refinery, plus $5 a car. Group 3 refiners were getting 4⅝ cents (resale) without trouble and there were said to be no excess stocks of consequence anywhere in the Mid-Continent territory.

Diminished Price Cutting Helps

A marked diminution of price cutting in the Chicago area contributed to the satisfactory tone of the Group 3 gasoline market. Spot business continued to be of limited volume, orders against contracts accounting for all but a small fraction of the total movement.

With consumption expanding under the influence of improving weather conditions, with inter-refinery buying maintaining a smoother balance between supply and demand and with the total of gasoline in storage below that of last year at this season, observers regarded the motor fuel outlook in the Group 3 area as distinctly cheerful.

Natural gasoline continued the steady rise which began almost two months ago, annexing another quarter-cent in all grades to the quotations of last week. Signs indicated that the naturals would keep in pretty close step with the refinery product. Their strength is ascribed not to scarcity of material, but rather to scarcity of offerings.

No Hurry to Sell Natural Gasoline

Manufacturers of natural gasoline are in no rush to sell so long as they have storage space, for there is general confidence in the ability of the market to hold its ground and to make still further gains. This disinclination to accept current quotations forces some buyer from time to time to offer an eighth or a quarter more in order to get material which he needs imperatively. Thus the price level goes a notch higher.

The vigor of the natural gasoline market is all the more noteworthy because of the fact that refiners right at this juncture are building summer motor fuel, in which the natural gasoline content is relatively low. The demand for refinery use in building fall and winter motor fuel does not start ordinarily till July, reaching its peak in August. The gratifying behavior of the market is regarded as evidence that the highs and lows of demand are being leveled out.

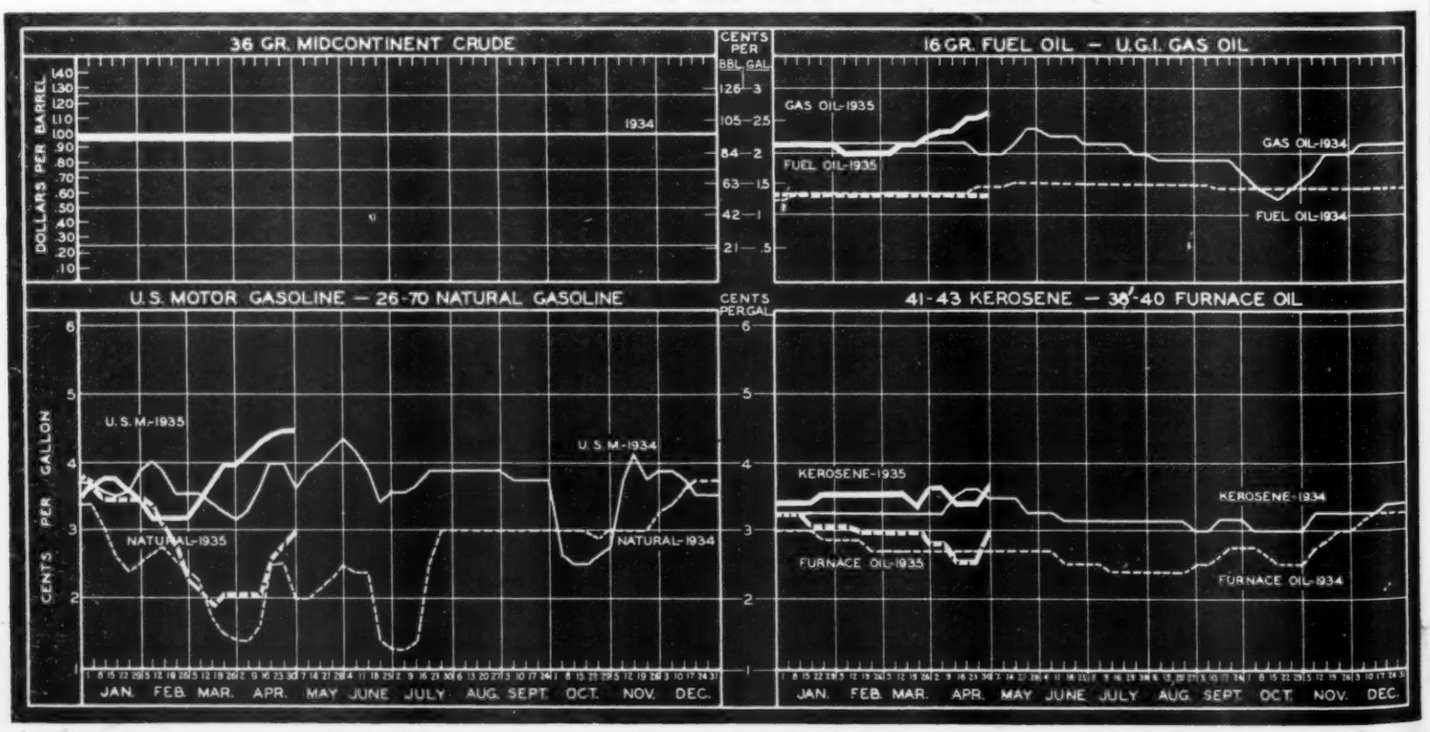
Lubricants Not So Cheerful

Unfulfilled expectations of better prices for bright and steam-refined stocks have begun to dampen whatever of good feeling there was in that division of the market. Refiners who cater especially to export trade have less complaint to make than those who look to domestic demand for their business. Bright stocks particularly are beginning to present a problem and there are said to be signs of this material backing up in some quarters.

Demand for 38-40 distillates, both prime white and straw, was lively, with the supply limited. The brisk market in this material spread over into the kerosene, and prices generally were higher. The demand was from rural areas.

Wax exhibited a firmer tone, with tendency to higher quotations. Eastern buying was reported to be better. Gas oil for cracking stock continued its upward movement.

Representative Mid-Continent Quotations on Crude Oil and Refined Products Basis Oklahoma (Group 3)



Strong Gasoline Market on East Coast Expected to Improve in May; Other Trading Is Dull

By C. O. WILLSON
New York Bureau, The Oil and Gas Journal

NEW YORK, Apr. 30.—Gasoline prices in this territory continued to point upward over the past week and a new month will open tomorrow with the expectation that quotations will show additional increases during the month. Except for gasoline, trading was dull in this market. There were no important changes in prices in the remaining products but buying was not as active as sellers had hoped for at the close of the month.

The gasoline situation was aided in this immediate territory last week when the Socony-Vacuum Oil Co., Inc., and other major companies advanced the posted dealer and retail service prices 1 cent per gallon. This advance left only Boston and a few other scattered points in New York State and New England at which exceptionally low gasoline service station prices prevail. However, a majority of the trade are in agreement that aside from the abnormally low points, a general increase of at least 1 cent per gallon for this entire territory is necessary.

The new price in the greater part of metropolitan New York is now 17 cents, including 5 cents state and federal taxes, or a net of 12 cents, with a further advance of three-tenths cent announced for tomorrow. With the tank car price in the New York harbor on ethylized regular 6¼ cents, this leaves a spread of less than 6 cents for marketing. Sellers are looking forward to a price of 18 cents, including tax for the regular grade in the near future. This price is in line with the 17-cent level which refiners endeavored to establish in this territory as a fair price when crude oil in the Mid-Continent first advanced to $1 in the early fall of 1933. Since the first of the year the state gasoline tax has increased 1 cent per gallon which explains the difference between the 17 and 18-cent schedules.

Tank Car Prices

The gasoline tank car market also looks stronger. The lowest tank car prices are 5½ cents for low octane U. S. Motor gasoline; 5¾ cents for middle octane; 6 cents for 65 octane and above, and 6¼ cents for ethylized branded grades of the major companies. A few companies are quoting one or more grades one-fourth cent above these prices. One of the largest independent operators the latter part of last week advanced its small barge prices on 65 octane material to the same as its tank car price which was 6 cents. Most sellers have a small-barge quotation which is one-fourth cent under the tank car prices, although in a tight market situation this differential is often reduced to one-eighth cent or eliminated entirely.

Although the export market continues dull at the Gulf Coast, the domestic quotations on middle and 65 octane material for coastwise shipment range from 5¼ to 5½ cents.

An essential feature of the stabilization plan is that it is necessary from time to time to make inter-refinery purchases of gasoline to prevent excess supplies being dumped on the market by a few sellers. It is contended it is not enough to keep total stocks and current production in line with current needs, but there must also be a buying program to take care of individual operating conditions which otherwise might disturb the market and bring about the failure of the entire program.

STEP IS TAKEN TOWARD NORMAL RETAIL PRICES

NEW YORK, Apr. 30.—An additional step in the return to normal gasoline dealer and station prices in this section was taken today with the announcement that effective May 1 schedules would be advanced eight-tenths cent in metropolitan New York.

The new retail price for regular grade gasoline effective in the greater part of New York City tomorrow will be 17.8 cents, including 5-cent federal and state taxes. This change, announced by Socony-Vacuum, will be met by all the major distributors according to information available today.

It was also announced that effective today the Standard Oil Co. of New Jersey advanced gasoline service station prices 4 cents per gallon at Camden, N. J. This point is generally conceded to be the center of price-cutting troubles in this immediate territory.

Both the export and domestic demand for wax continues slow. The situation in regard to crude scale has improved slightly, but there is little new business in the refined grades. One student of this market predicts that the time is near when wax buying will become more active. He believes the market is near the end of the period of increased refinery storage at high prices to be followed by an increasing demand at low prices with a gradual reduction in inventories.

According to this observer the situation in the wax market over the past two years is a duplicate of a cycle which has been repeated several times in the history of the wax market. In support of his statement he offers the following data covering stocks at the end of the month and representative prices for refined and crude scale wax (stocks in pounds based on Bureau of Mines reports covering entire United States):

	Stocks	Refined wax, 128-130° (cents per lb.)	Crude scale, 124-126° (cents per lb.)
	1933		
January	160,503,000	3.00	1.875
February	148,503,000	3.00	1.875
March	137,006,000	3.00	1.875
April	125,287,000	3.25	2.000
May	125,145,000	3.25	2.125
June	112,845,000	3.50	2.625
July	98,882,000	3.75	3.25
August	86,136,000	4.00	3.25
September	80,636,000	4.00	3.25
October	76,600,000	4.50	3.75
November	73,079,000	4.75	3.875
December	69,117,000	4.75	3.875
	1934		
January	78,934,000	4.75	3.875
February	83,791,000	5.00	3.875
March	86,644,000	5.00	3.70
April	91,763,000	5.00	3.70
May	101,551,000	5.00	3.50
June	108,987,000	5.00	3.20
July	115,137,000	5.00	2.90
August	119,702,000	4.75	2.875
September	118,991,000	4.75	2.875
October	123,099,000	4.75	2.875
November	130,222,000	4.75	2.800
December	136,136,00	4.75	2.75
	1935		
January	141,252,000	4.75	2.70
February	145,744,000	4.50	2.25
March	.....	4.00	2.00
April	.....	4.00	1.90

*New York.

These data when considered with reports covering production and consumption show that buying decreases at the higher price levels and this situation continues until heavy stocks accumulate of both the refined and crude scale grades. The topheavy stocks result in a collapse in prices to such low levels in some cases that refiners find it expedient to reduce their output. The low prices stimulate buying on the part of both domestic and foreign consumers and the stocks shortly start to decline. This continues as in the middle of 1933 until refiners find their stocks reaching the vanishing point with heavy buying on an advancing market.

This cycle continues until all grades are advanced to top schedules as was the case at the start of 1934. Buyers having covered their requirements curtail their purchases and stocks start to accumulate. Prices are maintained despite this month to month accumulation until they become topheavy and the decline starts with the crude scale grades.

In the present situation, crude scale prices at local refineries and export terminals have dropped to around 2 cents per pound, which obviously is about as low as the market can go. Based on the experience of the past the refined grades may drop below present levels before the bottom is reached, to be followed with a further curtailment in supplies and an increase in demand.

This same price and stock cycle could be traced in most of the other refinery products. It is most apparent in the case of wax because the ups and downs extend over a longer period.

Prices

Prices on kerosene, furnace oil, Diesel oil and residual fuel oil are unchanged from last week. The demand for kerosene and furnace oil is slow but prices appear to be on bottom following recent declines. Backed with firm market at the Gulf, quotations here on marine and industrial fuel oils are firm with a fair demand.

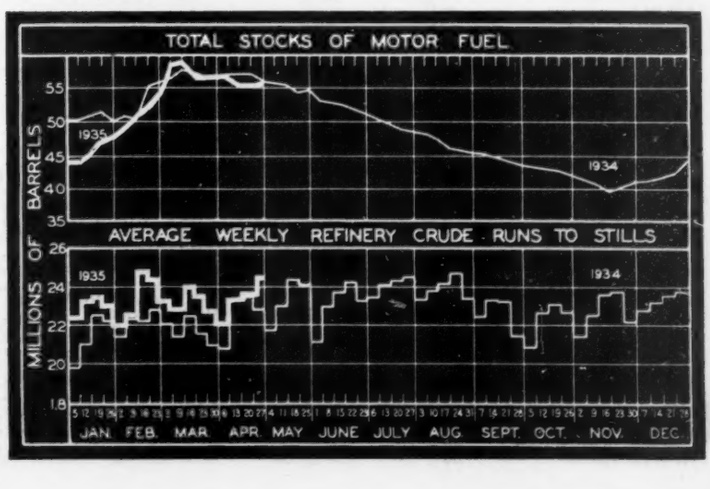
Steam refined stocks and bright stocks—both Pennsylvania and western—are not strong in this market. Pennsylvania neutrals are 1 to 2 cents lower in the export markets, the 200-3 grade bringing 28 cents in barrels. Pennsylvania bright stocks also are slightly lower, selling at a low of 21 cents in barrels for the light grade. Most of the steam refined grades are unchanged.

Export gasoline and kerosene at the Gulf are unchanged in price with no sales or inquiries reported in this market over the past week.

American Petroleum Institute Weekly Refinery Statistics

Weed Ending April 27, 1935

	Capacity reporting per cent	Daily crude runs (bbls.)	Finished motor fuel (bbls.)	Gas oil and fuel oil (bbls.)
East Coast	100.0	465,000	17,253,000	8,971,000
Appalachian	93.3	100,000	2,138,000	727,000
Indiana, Illinois, Kentucky	94.6	357,000	9,546,000	4,162,000
Oklahoma, Kansas, Missouri	83.7	262,000	5,682,000	4,027,000
Inland Texas	47.6	87,000	1,376,000	1,736,000
Texas Gulf	97.7	511,000	6,543,000	8,939,000
Louisiana Gulf	96.4	108,000	1,310,000	3,104,000
North Louisiana and Arkansas	83.7	45,000	273,000	313,000
Rocky Mountain	66.7	41,000	901,000	770,000
California	96.9	453,000	10,075,000	64,038,000
Total United States	89.8	2,429,000	55,097,000	96,787,000



Group 3 Market Vigorous on an Unusual Number of Fronts, With Gasoline Still Making Gains

By T. F. SMILEY

Not often does the market in petroleum products present an aggressive attitude on so many different fronts as it has done this week. Refinery gasoline, natural gasoline, kerosene, tractor fuels, gas oil—all were in vigorous demand; and in some other divisions, where discouragement had prevailed, there was a more hopeful feeling.

Although tank car prices of gasoline underwent little or no change, the market was said to be gaining firmness, with likelihood of continuing the advance which it began in late February.

Resumptions Cause Brief Uneasiness

News that 11 plants in East Texas, previously shut down, had resumed operation late last week, all but one of them running on illegal crude, caused a bit of uneasiness, but no material softening of the market. Disquiet over their action was of short duration, for the state attorney general's department and the State Railroad Commission promptly cracked down on the insurgents, closing one plant after another until on Monday of this week there were said to be only two operating on unlawful crude, and the future course of these two was conjectural.

The refineries which had their few hours of "hot" oil adventure were said to have been among those commonly characterized as "truck plants." These plants in recent months have disposed of enormous quantities of illicit gasoline through fleets of trucks which carried it to consuming areas inside the State, keeping out of the clutches of both the federal and the state tender boards.

Twenty-nine refiners in East Texas are subjects of injunction-receivership or contempt proceedings filed in the State District Court for the alleged running of illegal crude. Some of the plants are padlocked by court order.

Refined Oil Market Barometer

Motor fuel held its ground in all areas in the last week and fresh strength appeared in other divisions of the market, notably natural gasoline, kerosene, tractor fuels and gas oil. Inter-refinery buying is helping to keep the gasoline market fairly well stabilized, and this, along with more favorable motoring weather, is expected to prevent any interruption of consequence in the advance now under way. Bright stocks and steam-refined stocks lack strength.

Mid-Continent—Gasoline, natural gasoline, kerosene, high-gravity distillates and gas oil strong. Little change otherwise.

East Coast—Gasoline gaining strength. Kerosene and furnace oil slow. Bright and steam-refined stocks dull.

Gulf Coast—Gasoline tighter. Kerosene improved. Fuels moving readily. Lubricants slowest division.

Pennsylvania—Gasoline continues strong. Price increases likely. Rest of market unchanged.

California—General market firmer. Diesel and fuel oil strong.
Chicago—Gasoline firm. Kerosene active and steady.

East Texas plants operating on lawful crude were holding their low octane motor fuel at 4⅝ cents (resale) f.o.b. refinery, plus $5 a car. Group 3 refiners were getting 4⅝ cents (resale) without trouble and there were said to be no excess stocks of consequence anywhere in the Mid-Continent territory.

Diminished Price Cutting Helps

A marked diminution of price cutting in the Chicago area contributed to the satisfactory tone of the Group 3 gasoline market. Spot business continued to be of limited volume, orders against contracts accounting for all but a small fraction of the total movement.

With consumption expanding under the influence of improving weather conditions, with inter-refinery buying maintaining a smoother balance between supply and demand and with the total of gasoline in storage below that of last year at this season, observers regarded the motor fuel outlook in the Group 3 area as distinctly cheerful.

Natural gasoline continued the steady rise which began almost two months ago, annexing another quarter-cent in all grades to the quotations of last week. Signs indicated that the naturals would keep in pretty close step with the refinery product. Their strength is ascribed not to scarcity of material, but rather to scarcity of offerings.

No Hurry to Sell Natural Gasoline

Manufacturers of natural gasoline are in no rush to sell so long as they have storage space, for there is general confidence in the ability of the market to hold its ground and to make still further gains. This disinclination to accept current quotations forces some buyer from time to time to offer an eighth or a quarter more in order to get material which he needs imperatively. Thus the price level goes a notch higher.

The vigor of the natural gasoline market is all the more noteworthy because of the fact that refiners right at this juncture are building summer motor fuel, in which the natural gasoline content is relatively low. The demand for refinery use in building fall and winter motor fuel does not start ordinarily till July, reaching its peak in August. The gratifying behavior of the market is regarded as evidence that the highs and lows of demand are being leveled out.

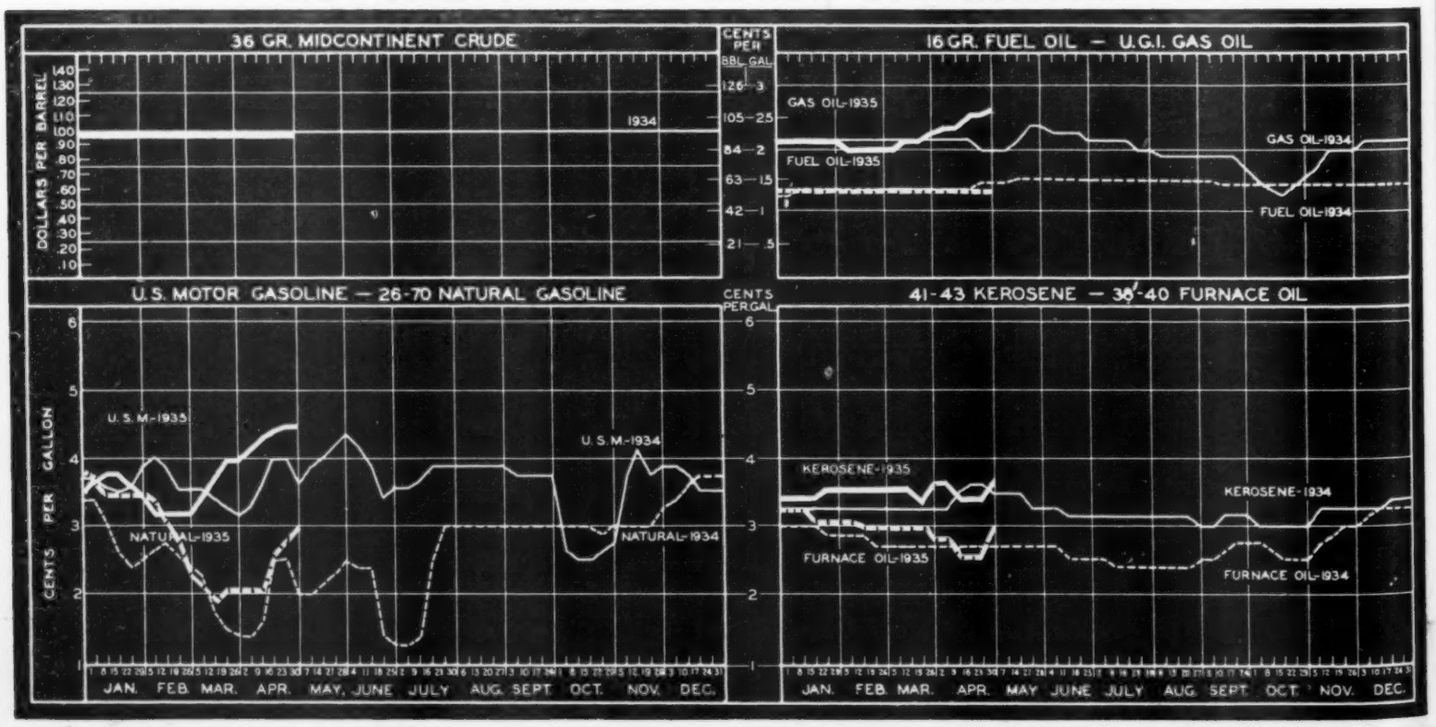
Lubricants Not So Cheerful

Unfulfilled expectations of better prices for bright and steam-refined stocks have begun to dampen whatever of good feeling there was in that division of the market. Refiners who cater especially to export trade have less complaint to make than those who look to domestic demand for their business. Bright stocks particularly are beginning to present a problem and there are said to be signs of this material backing up in some quarters.

Demand for 38-40 distillates, both prime white and straw, was lively, with the supply limited. The brisk market in this material spread over into the kerosene, and prices generally were higher. The demand was from rural areas.

Wax exhibited a firmer tone, with tendency to higher quotations. Eastern buying was reported to be better. Gas oil for cracking stock continued its upward movement.

Representative Mid-Continent Quotations on Crude Oil and Refined Products Basis Oklahoma (Group 3)



Strong Gasoline Market on East Coast Expected to Improve in May; Other Trading Is Dull

By C. O. WILLSON
New York Bureau, The Oil and Gas Journal

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Texas Gulf	97.7	511,000	6,543,000	8,939,000
Louisiana Gulf	96.4	108,000	1,310,000	3,104,000
North Louisiana and Arkansas	83.7	45,000	273,000	313,000
Rocky Mountain	66.7	41,000	901,000	770,000
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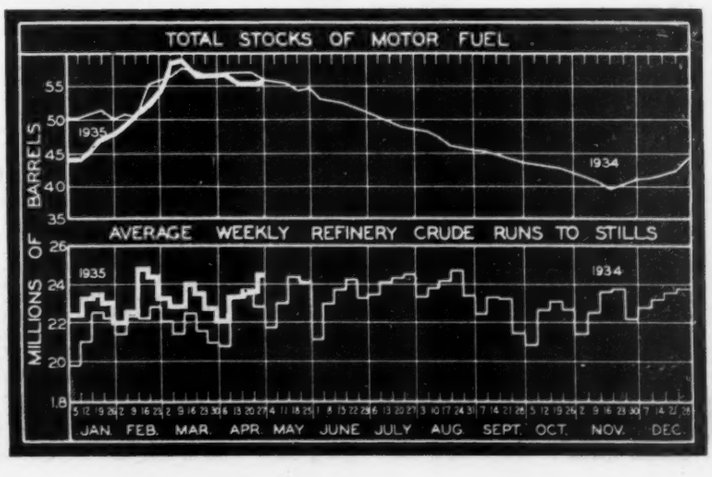


REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement except as otherwise noted

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasolines

	Apr. 30		Apr. 23	
OKLAHOMA (Group 3)—				
U. S. Motor grades:				
Below 63 octane	.04½	.04⅝	.04½	.04⅝
63-70 octane	.05¼	.05⅜	.05¼	.05⅜
60-62 400 grade:				
Below 63 octane	.04½	.04⅝	.04½	.04⅝
63-70 octane	.05¼	.05⅜	.05¼	.05⅜
64-66 375	.04⅝	.04¾	.04⅝	.04¾
68-70 360	.04¾	.04⅞	.04¾	.04⅞
NORTH TEXAS—				
U. S. Motor grades:				
Below 63 octane	.04½	.04⅝	.04½	.04⅝
63-70 octane	.05¼	.05⅜	.05¼	.05⅜
60-62 400	.04½	.04⅝	.04½	.04⅝
64-66 375	.04⅝	.04¾	.04⅝	.04¾
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
U. S. Motor grades:				
Below 63 octane	.05		.05	
63-70 octane	.05¾		.05¾	
60-62 400	.05		.05	
ARKANSAS (Ark., N. La. & Miss. del.)—				
U. S. Motor grades:				
Below 63 octane	.05		.05	
63-70 octane	.05¾		.05¾	
CHICAGO (based on Oklahoma Group 3)—				
U. S. Motor grades:				
Below 63 octane	.04½	.04⅝	.04½	.04⅝
63-70 octane	.05¼	.05⅜	.05¼	.05⅜
60-62 400	.04½	.04⅝	.04½	.04⅝
64-66 375	.04⅝	.04¾	.04⅝	.04¾
68-70 360	.04¾	.04⅞	.04¾	.04⅞
Aviation fighting grade	.05½	.05⅝	.05⅝	.05½
PENNSYLVANIA (inland refineries)—				
58-60 U. S. Motor:				
Below 60 octane	.05¼	.05⅜	.05¼	
60-64.9	.06½	.06⅝	.06½	
65-70 octane	.06⅞	.07	.06¾	
68-70 350	.06¼		.06¼	.06½
CALIFORNIA (domestic movement)—				
54-58 U. S. Motor	.07	.08	.07	.08
58-60 400	.08	.09	.08	.09
EAST COAST—				
U. S. Motor, below 60 octane:				
*New York (Bayonne)	.05½		.05½	
Baltimore	.05½	.05¾	.05½	.05¾
U. S. Motor, 60-64.9 octane:				
*New York (Bayonne)	.05¾		.05¾	
Philadelphia	.05¾	.06	.05¾	.06
Boston	.05¾		.05¾	
Baltimore	.05¾		.05¾	
Charleston, S. C.	.05¾		0.5¾	
U. S. Motor, 65 and above:				
*New York (Bayonne)	.06		.06	
Philadelphia	.06	.06¼	.06	.06¼
Boston	.06	.06¼	.06	.06¼
Baltimore	.06	.06¼	.06	.06¼
Charleston, S. C.	.06	.06¼	.06	.06¼

*All grades of gasoline one-fourth cent less for small barge shipments.

GULF COAST (domestic)—				
U. S. Motor:				
Below 60 octane	.05¼		.05¼	
60-64.9 octane	.05¼	.05½	.05¼	.05½
65 octane and higher	.05¼		.05½	

Naphthas

	Apr. 30		Apr. 23	
PENNSYLVANIA (inland refineries)—				
50-52 (blending)	.05½	.05¼	.05½	
52-54 450 (blending)	.05⅝	.05¾	.05⅝	
54-56 450 (blending)	.05⅝	.05¾	.05⅝	
50-52 450 (blending)	.05⅛	.05¼	.05⅛	
CHICAGO (based on Oklahoma Group 3)—				
50-52 450 (blending)	.04½	.04¾	.04½	.04¾
Cleaners' naphtha, 56-58 gr., 200 i.b.p., 320 e.p.	.06¾	.07	.06¾	.07
Lacquer diluent, 180 i.b.p., 250 e.p.	.07¾	.08	.07¾	.08
Lacquer diluent, 140 i.b.p., 200 e.p.	.08¾	.09	.08¾	.09
Rubber solvent, 68-70 gr., 100 i.b.p., 300 e.p.	.06¾	.07	.06¾	.07
Stoddard solvent, 300 i.b.p., 410 e.p., over 83° flash	.06¼	.06½	.06¼	.06½
Pet. thinner, 290-300 i.b.p., 410 e.p., over 83° flash	.06¼	.06½	.06¼	.06½
V.M.&P. naphtha, 56-58 gr., 190-200 i.b.p., 330 e.p.	.06¾	.07	.06¾	.07
Petroleum spirits	.05¾	.06	.05¾	.06

Natural Gasolines

	Apr. 30		Apr. 23	
OKLAHOMA (Group 3)—				
Grade 26-70	.03		.02¾	.03
Grade 18-55	.03¾	.04	.03½	.03¾
Low vapor pressure grades:				
14 lb. v.p. (max.)	.04¼	.04⅝	.04	.04¼
12 lb. v.p. (max.)	.04¾		.04½	.04⅝
NORTH TEXAS—				
Grade 26-70	.02¾	.03	.02½	.02¾
Grade 18-55	.03⅝	.03¾	.03⅜	.03½
Low vapor pressure grades:				
*14 lb. v.p. (max.)	.04¼	.04⅜	.04	.04¼
*12 lb. v.p. (max.)	.04⅝		.04½	.04⅞

*Nominal.

NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
Grade 26-70	.03¼		.03	
CALIFORNIA—				
75-85 375	.05	.06	.05	.06

Kerosenes

(All kerosenes water white)

	Apr. 30		Apr. 23	
OKLAHOMA (Group 3)—				
41-43	.03¾	.03⅞	.03¼	.03⅝
42-44	.03¾	.03⅞	.03⅝	.03¾
NORTH TEXAS—				
40-41	.03½	.03⅝	.03⅜	.03½
41-43	.03⅝	.03¾	.03½	.03⅝
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
41-43	.03¾	.03⅞	.03¾	
ARKANSAS (Ark., N. La. & Miss. del.)—				
41-43	.03⅞		.03⅞	
PENNSYLVANIA (inland refineries)—				
45	.04¾		.04¾	
46	.04⅞		.04⅞	
47	.05		.05	
CHICAGO (based on Oklahoma Group 3)—				
41-43	.03⅝	.03¾	.03½	.03⅝
42-44	.03¾	.03⅞	.03¾	.03⅞
CALIFORNIA (Pacific Coast consumption)—				
38-40 high burning test	.04½	.05	.04¼	.04¾
NEW YORK (Bayonne, N. J.)—				
41-43	.05	.05¼	.05	.05¼
GULF COAST (domestic)—				
41-43	.04	.04¼	.04	.04¼

Petroleum Coke

(Prices per ton f.o.b. refineries in Chicago area)
(Refineries will absorb freight to 80 cents a ton)

	Apr. 30	Apr. 23
Pile run	6.00	6.00
Direct from still	7.00	7.00
Egg, nut, pea	8.50	8.50
Lump	8.50	8.50

Furnace Oils and Tractor Fuels

(Zero cold test under 190° flash and good odor)

	Apr. 30		Apr. 23	
OKLAHOMA (Group 3)—				
32-36 straw	.02⅝	.02¾	.02⅝	.02¾
36-38 straw	.02¾	.02⅞	.02¾	.02⅞
38-40 straw	.03	.03⅛	.02⅝	.02¾
38-40 prime white	.03⅛	.03¼	.03	.03⅛
NORTH TEXAS—				
38-40 straw	.03⅛	.03¼	.02⅞	.03
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
36-40 furnace oil	.02¾	.02⅞	.02¾	.02⅞
ARKANSAS (Ark., N. La. & Miss. del.)—				
32-36 furnace oil	.02¾	.02⅞	.02¾	.02⅞
CHICAGO (based on Oklahoma Group 3)—				
32-36 straw	.02⅞	.03	.02⅞	.03
38-40 straw	.02⅞	.03⅛	.02⅞	.03⅛
38-40 prime white	.03⅛	.03¼	.03⅛	.03¼
NEW YORK (Bayonne, N. J.)—				
No. 1	.05	.05¼	.05	.05¼
No. 2	.04	.04¼	.04	.04¼
No. 4	.04	.04¼	.04	.04¼

Gas Oil, Diesel Oil and Fuel Oil

(Gas oil per gal., Diesel and fuel oils per bbl.)

	Apr. 30		Apr. 23	
OKLAHOMA (Group 3)—				
32-36 gas oil, cracking stock	.02⅝	.02¾	.02½	.02⅝
U.G.I. gas oil	.02⅝	.02¾	.02½	.02⅝
32-36, zero to 15 gas oil	.02⅝	.02¾	.02⅝	.02¾
28-30, No. 3 burner oil	1.02½	1.07½	1.02½	1.07½
26-30, zero to 10 fuel oil	.92½	.97½	.92½	.97½
24-26 fuel oil	.75	.77½	.75	.77½
20-22 fuel oil	.70	.75	.70	.75
Below 16 fuel oil	.60	.62½	.60	.62½
NORTH TEXAS—				
32-36 gas oil, industrial	.02½	.02⅝	.02½	.02⅝
22-26 fuel oil	.65	.67½	.65	.67½
Below 20 fuel oil	.60	.62½	.60	.62½
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
30-32 gas oil, zero	.02¾	.02⅞	.02¾	.02⅞
14-16 fuel oil	.70	.75	.70	.75
ARKANSAS (Ark., N. La. & Miss. del.)—				
30-32 gas oil, zero	.02¾	.02⅞	.02¾	.02⅞
32-36 gas oil	.02¾	.02⅞	.02¾	.02⅞
14-16 fuel oil	.65	.70	.65	.70
CHICAGO (based on Oklahoma Group 3)—				
32-36 gas oil, industrial	.02½	.02⅝	.02⅜	.02½
28-30 zero to 10, fuel oil	1.05	1.10	1.05	1.10
26-28 zero to 10, fuel oil	.95	1.00	.95	1.00
22-26 zero to 10, fuel oil	.82½	.87½	.82½	.87½
18-22 zero to 10, fuel oil	.67½	.70	.67½	.70
Below 18 fuel oil	.57½	.60	.57½	.62½

Note: Fuel oils of more than 40 cold test generally 5 to 15 cents per barrel in all these areas.

PENNSYLVANIA (inland refineries)—				
30-40	.04		.04	
CALIFORNIA—				
Los Angeles:				
30-34 gas oil, per bbl.	1.15	1.25	1.15	1.25
27 plus Diesel	1.15	1.25	1.15	1.25
27 plus Diesel (bunkers)	1.25	1.30	1.20	1.30
12-16 (bunkers at tidewater)	.85	.95	.82½	.90
10-16 (cargo lots)	.75	.80	.75	.80
12-17 (tank cars)	.65	.85	.62½	.85
San Joaquin Valley:				
10-18 (tank cars)	.60	.75	.60	.70
San Francisco:				
27 plus Diesel, per bbl.	1.25		1.25	
27 plus Diesel (bunkers)	1.35		1.30	
10-16 (bunkers)	1.00		.90	
GULF COAST—				
28-30 gas oil	.03½	.03⅝	.03½	.03⅝
28-30 Diesel (bunkers)	1.70		1.70	
Bunker C (bulk cargoes)	.85	.90	.85	.90
Bunker C (bunkers)	.95	1.00	.95	1.00
NEW YORK (Bayonne, N. J.)—				
27 plus, gas oil	.04	.04¼	.04	.04¼
28-30 Diesel (lighterage 6½ cents per bbl.)	1.89		1.89	
28-30 Diesel (tank cars)	.04¼		.04¼	
*Bunker C (to ocean-going ships in N. Y. harbor)	1.15		1.15	
Industrial fuel (tank cars)	.03¾	.04	.03¾	.04

*Lighterage charge 5 cents per barrel additional.

Neutral Oils

(Vis. at 100° F. except Pennsylvania, and color N.P.A.)

	Apr. 30		Apr. 23	
OKLAHOMA (Group 3)—				
Zero to 10 Cold Test:				
150-3	.10		.10	
180-3	.11¼		.11¼	
180-4	.10⅝		.10⅝	
200-3	.11⅜		.11⅜	
200-4	.11¼		.11¼	
240-3	.13⅜		.13⅜	
240-4	.13¼		.13¼	
280-3	.14⅜		.14⅜	
280-4	.14		.14	
300-3½	.15¼		.15¼	
400-4	.17¼		.17¼	
100-2 paraffin oil	.05¾		.05¾	
15-20 Cold Test:				
200-3	.10⅜		.10⅜	
200-4	.10¼		.10¼	
240-3	.12⅜		.12⅜	
240-4	.12¼		.12¼	
280-3	.13¾		.13¾	
280-4	.13		.13	
GULF COAST—				
Pale Oils:				
200-3	.07	.07½	.07	.07½
300-3	.07½	.08	.07½	.08
500-3½	.08½	.09	.08½	.09
750-3½	.09	.09¼	.09	.09¼
1,200-3½	.09½	.09¾	.09½	.09¾
2,000-4	.09¾	.10	.09¾	.10
Red Oils:				
200-5-6	.07	.07¼	.07	.07¼
300-5-6	.07¼	.07½	.07¼	.07½
500-5-6	.08	.08½	.08	.08½
750	.08½	.09	.08½	.09
1,200-5-6	.09¼	.09½	.09¼	.09½
CALIFORNIA (moving to domestic market)—				
Pale Oils:				
100-2½-3	.07½	.07¾	.07½	.07¾
200-2½-3	.08	.08¼	.08	.08¼
300-3-3½	.09	.10	.09	.10
350-3-4	.10½	.11	.10½	.11
400-3-4	.12	.12¼	.12	.12¼
450-3-4	.12½	.12¾	.12½	.12¾
550-3-4	.13	.13½	.13	.13½
600-3-4	.13½	.14	.13½	.14
Red Oils:				
200-4-5	.08½	.09	.08½	.09
300-5-6	.09		.09	
350-5-6	.10	.10¼	.10	.10¼
400-5-6	.10½	.10¾	.10½	.10¾

450-5-6	.11	.11¼	.11	.11¼
500-5-6	.11½	.11¾	.11½	.11¾
600-5-6½	.12	.12¾	.12	.12¾
700-6½ plus	.13	.13¼	.13	.13¼
750-6½ plus	.13½	.13¾	.13½	.13¾
900-6½ plus	.14	.14½	.14	.14½
PENNSYLVANIA—				
150 vis. at 70° F., 3 color, 400-405 flash:				
Zero pour test	.20½	.21	.20½	.21
10 pour test	.19½	.20	.19½	.20
15 pour test	.19	.19½	.19	.19½
25 pour test	.18	.18½	.18	.18½
180 vis. at 70° F., 3 color:				
25 pour test	.21	.21½	.21	.21½
200 vis. at 70° F., 3 color:				
Zero pour test	.25½	.26	.25½	.26
10 pour test	.24½	.25	.24½	.25
15 pour test	.24	.24½	.24	.24½
25 pour test	.23	.23½	.23	.23½

Bright and Steam Refined Stocks

OKLAHOMA (Group 3)—	Apr. 30		Apr. 23	
Bright Stocks:				
190-200 D	.17		.17	
150-160 D, 0-10	.14		.14	
150-160 D, 10-25	.13½		.13½	
150-160 25-40	.13		.13	
150-160 E	.13		.13	
Steam refined:				
630 light green (treated)	.07½	.08	.07½	.08
600 light green (untreated)	.06	.08	.06	.08
600 dark green (untreated)	.04½	.07	.04½	.07
PENNSYLVANIA—				
Bright Stocks (Pennsylvania grade, No. 8 color, 145-50 at 210; 540-550 flash):				
10 pour test	.18½	.19	.18½	.19
15 pour test	.17½	.18	.17½	.18
20 pour test	.16½	.17	.16½	.17
25 pour test	.15½	.16	.15½	.16
Steam refined:				
600	.07½	.08	.07½	.08
650	.10	.10½	.10	.10½
600 Pennsylvania flash	.11	.11½	.11	.11½
630 flash	.16	.16½	.16	.16½
600 Warren E filtered	.12	.12½	.12	.12½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—	Apr. 30		Apr. 23	
124-126 white crude scale	.02	.02¼	.02	.02¼
PENNSYLVANIA (inland refineries)—				
122-124	.0210	.0215	.0210	.0215
124-126	.0215	.0220	.0215	.0220
NEW YORK—				
Wax (a.m.p.) in bags fully refined:				
Refined grades:				
123-125	.0380		.0380	
125-127	.0400		.0400	
128-130	.0425		.0425	
130-132	.0440		.0440	
133-135	.0500		.0500	
135-137	.0525		.0525	
Crude scale:				
124-126 w.s.	.0200	.0225	.0200	.0225
124-126 y.s.	.02	.0215	.02	.0215
Petroleum in barrels in carload lots:				
Dark green	.01⅞		.01⅞	
Amber	.02⅞	.03	.02⅞	.03
Extra amber	.03	.03⅛	.03	.03⅛
Lily white	.06⅝	.06¾	.06⅝	.06¾
Snow white	.07¾	.07⅞	.07¾	.07⅞
Cream	.05⅝	.05¾	.05⅝	.05¾
122-124 wax	.0440	.0450	.0440	.0450
125-127 wax	.0465	.0475	.0465	.0475
127-129 wax	.0480	.0490	.0480	.0490
130-132 wax	.0540	.0550	.0540	.0550
132-134 wax	.0565	.0575	.0565	.0575

*Cents per pound on carload lots in burlap bags of 225 lbs. approx. Add 3° F. a.m.p.

Export Prices

GASOLINE

GULF COAST—	Apr. 30		Apr. 23	
U. S. Motor	.04½	.04⅝	.04½	.04⅝
60-62 400	.04⅝	.04¾	.04⅝	.04¾
61-63 390	.04¾		.04¾	
64-66 375	.04⅞	.05	.04⅞	.05
LOS ANGELES:				
U. S. Motor grades:				
53-55 octane	.04		.04	.04¼
55-65 octane	.04	.04¼	.04¼	
65-67 octane	.04¼	.04½	.04¼	.04½
67-69 octane	.04½	.04¾	.04½	.04¾
Above 69 octane	.04¾	.05	.04¾	.05¼
58-60 400 endpoint	.04½	.05	.04½	.05
KEROSENE				
GULF COAST—				
41-43 prime white	.03⅞	.04	.03⅞	.04
41-43 water white	.04	.04¼	.04	.04¼
44 water white	.04¼		.04¼	
LOS ANGELES:				
41-43 water white	.04½	.05	.04¼	.04¾
LUBRICANTS				
NEW YORK (f.a.s. in bbls.)—				
Cylinder Stocks:				
600 Warren E	.18½	.19	.18½	.19
600 S.R. unfiltered	.14	.14½	.14	.14½
650 S.R. unfiltered	.15½	.16	.15½	.16
600 flash S.R.	.16½	.17	.16½	.17
630 flash S.R.	.20½	.21	.20½	.21
Bright Stocks:				
8 color	.21	.22	.21½	.22
6½ plus colors in dilution	.20	.21	.20½	.21
NEUTRAL OILS				
200-3 color	.28		.30	.32
150-3 color	.28		.25	.27
PARAFFIN WAX (Fully Refined)				
NEW YORK (prices per pound):				
123-125 a.m.p.	.03625		.03625	
125-127 a.m.p.	.0375		.0375	
128-130 a.m.p.	.0400		.0400	
130-132 a.m.p.	.0425	.0450	.0425	.0450
133-135 a.m.p.	.0475		.0475	
135-137 a.m.p.	.05		.05	
Crude scale:				
124-126 w.s.	.0200	.0215	.0200	.0215
124-126 y.s.	.02	.0205	.02	.0205

Crude Oil Gravity Table

Gravity—	1 Oklahoma and Kansas	2 North Texas, Central Texas and East Central Texas	3 North Louisiana and Arkansas	4 Gray County, Texas	5 Carson, Hutchinson and Moore Counties, Texas	6 Conroe, Texas	7 Salt Creek, Wyo.	8 Gulf Coast, Texas and Louisiana	9 Gulf Coast, Texas and Louisiana	10 Cotton Valley, Louisiana
Below 20	....	....	....	....	....	....	....	$.82	$.82	....
20-20.9	....	....	....	....	....	....	....	.84	.84	....
21-21.9	....	....	....	....	....	....	....	.86	.86	....
22-22.9	....	....	....	....	....	....	....	.88	.88	....
23-23.9	....	....	....	....	....	....	....	.90	.90	....
24-24.9	....	....	....	....	....	....	....	.92	.92	....
Below 25	*$ 76	....	....	....	....	....	....	....	....	$.70
25-25.9	* 78	....	....	....	....	....	....	.94	.94	.72
26-26.9	* 80	....	....	....	....	....	....	.96	.96	.74
27-27.9	* 82	....	....	....	....	....	....	.98	.98	.76
28-28.9	* 84	....	....	....	....	....	....	1.00	1.00	78
Below 29	.84	$.79	$.79	....	....	....	$.84	....	....	....
29-29.9	.86	.81	.81	....	....	....	.86	1.02	1.02	.80
30-30.9	.88	.83	.83	....	....	....	.88	1.04	1.04	.82
31-31.9	.90	.85	.85	....	....	....	.90	1.06	1.05	84
32-32.9	.92	.87	.87	....	....	....	.92	1.08	1.06	.86
33-33.9	.94	.89	.89	....	....	....	.94	1.10	1.07	.88
34-34.9	.96	.91	.91	....	....	....	.96	1.12	1.08	.90
Below 35	....	....	....	$ 79	$ 69	....	....	....	....	....
35-35.9	.98	.93	.93	.81	.71	$1.09	.98	1.12	1.09	.92
36-36.9	1.00	.95	.95	.83	73	1.11	1.00	1.12	1.10	.94
37-37.9	1.02	.97	.97	.85	75	1.13	1.02	1.12	1.11	.96
38-38.9	1.04	99	.99	.87	.77	1.15	1.04	1.12	1.12	.98
39-39.9	1.06	1.01	1.01	.89	.79	1.17	1.06	1.12	1.13	1 00
40 and over	1.08	1.03	1.03	.91	.81	1.19	1.08	1.12	1.14	1.02

Effective December 3, 1934, Panhandle Refining Co., purchasing oil in North Texas, posted below 29 degrees, 68 cents; 29-29.9 degrees, 70 cents, with 2 cents added for each additional degree up to 40 and over, at 92 cents.

*The following companies purchasing crude oil in Kansas or Oklahoma, or both, begin their price schedule: Below 25°, 76 cents; 25-25.9°, 78 cents, with 2 cents added for each degree upward to 40 and over at $1.08; Carter Oil Co., Magnolia Petroleum Co., Pure Oil Co., Rock Island Refining Co., Shell Petroleum Corp., Sinclair Prairie Oil Marketing Co., Skelly Oil Co., and Wilcox Oil & Gas Co. All others begin their schedules at below 29°, 84 cents, excepting Philtex Oil Co., which begins with below 31° at 88 cents.

Column 1—Effective September 29, 1933, Texas Co. of Oklahoma; Stanolind Crude Oil Purchasing Co. in Kansas and Oklahoma; Anderson & Prichard, Inc., in Oklahoma; Bell Oil & Gas Co. in Oklahoma; Carter Oil Co. in Oklahoma and Kansas; Deep Rock Oil Co. in Oklahoma; Derby Oil Co. in Kansas; Globe Refining Co. in Oklahoma; Golden Rule Refining Co. in Kansas; Gypsy Oil Co. in Oklahoma and Kansas; Kanotex Refining Co. in Kansas; Magnolia Petroleum Co. in Oklahoma; Mid-Continent Petroleum Corp. in Oklahoma; National Refining Co. in Kansas and Oklahoma; Shell Petroleum Corp. in Kansas and Oklahoma; Sinclair Prairie Oil Marketing Co. in Kansas and Oklahoma; Texas Co. in Oklahoma; Tide Water Oil Co. in Oklahoma; Vickers Refining Co. in Kansas; Continental Oil Co. in Kansas and Oklahoma; Empire Pipe Line Co. in Oklahoma and Kansas; Philtex Oil Co. in Kansas and Oklahoma; Pure Oil Co. in Oklahoma; Skelly Oil Co. in Kansas. Effective September 29, by White Eagle Oil Corp. in Kansas; October 1, by Barnsdall Refineries, Inc., in Oklahoma.

Column 2—Effective September 29, 1933, by Texas Co., Stanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Bell Oil & Gas Co., Continental Oil Co. Effective January 14, 1935, in the Van Pool, Van Zandt County, Pure Oil Co. posted below 29°, 79 cents, with 2 cents added for each degree up to 40 and over at $1.03.

Column 3—Effective September 29, 1933, by Texas Co., Magnolia Petroleum Co., Gulf Refining Co. Effective December 22, Stanolind Oil & Gas Co. in Pine Island, Louisiana, and Marion County, Texas, posted below 29°, 79 cents, with 2 cents added for each degree up to 40 and over at $1.03. Effective March 17, 1934, by Standard Oil Co. of Louisiana and Louisiana Oil Refining Co. Starting with below 25°, 71 cents, adding 2 cents for each degree upward to 40 and over at $1.03.

Column 4—Effective September 29, 1933, by Texas Co., Humble Oil & Refining Co., Magnolia Petroleum Co., Sinclair Prairie Oil Marketing Co., and H. F. Wilcox Oil & Gas Co. On same day, Philtex Oil Co. posted below 31°, 71 cents, with 2 cents added for each degree up to 40 and over at 91 cents. Effective June 1, 1934, Texas Co. (see note above).

Column 5—Effective September 29, 1933, by Texas Co., Humble Oil & Refining Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Wilcox Oil & Gas Co., Continental Oil Co. On same day, Philtex Oil Co. posted below 31°, 61 cents, with 2 cents added for each degree upward to 40 and over at 81 cents. Effective June 1, 1934, Texas Co. (see note above).

Column 6—Effective September 29, 1933, by Humble Oil & Refining Co. and Tide Water Oil Co., and on September 30 by Texas Co., which on September 29 had posted a schedule of $1.07 to $1.12 with a 1-cent spread on each degree.

Column 7—Effective September 29, 1933, by Stanolind Oil & Gas Co.

Column 8—Effective September 29, 1933, by Humble Oil & Refining Co., Gulf Pipe Line Co., Shell Petroleum Corp., Pure Oil Co., Sinclair Prairie Oil Marketing Co. On October 2, Magnolia Petroleum Co. posted Lockport, Louisiana, 20-20.9°, 84 cents, with 2 cents added for each degree upward to 34 and over at $1.12; and in Cameron Meadows and Iowa, Louisiana, below 20°, 72 cents, with 2 cents added for each degree up to 34 and over at $1.02. These prices were 2 cents higher on each degree than Magnolia prices posted on September 29. Effective September 29, Shell Petroleum Corp. posted in Iowa, Louisiana, district: Below 20°, 70 cents, with 2 cents added for each degree upward to 34° and over at $1; and in Black Bayou and White Castle, Louisiana: Below 20°, 80 cents, with 2 cents added for each degree upward to 34° and over at $1.10.

Column 9—Effective September 30, 1933, Texas Co. (On September 29 Texas Co. has posted a schedule of 2 cents on each degree, but changed it on September 30.)

Column 10—Effective September 29, 1933, by Louisiana Oil Refining Co.

(California Crude Oil Prices on Page 35)

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

East Texas	$1.08
Corsicana (heavy) (June 17, 1933)*	.80
Other fields	(See gravity table)

Note—In East Texas, effective September 29, 1933, by Texas Co., Stanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Shell Petroleum Corp., Gulf Pipe Line Co., Tide Water Oil Co., Sinclair Prairie Oil Marketing Co., Magnolia Petroleum Co., Sun Oil Co., Panola Pipe Line Co., Empire Oil & Refining Co., and Atlas Pipe Line Co. posted 60 cents per barrel in East Texas, but on November 3 resumed its posted price of $1 per barrel, making it retroactive to October 22.

*Magnolia Petroleum Co.

West Texas

Crane, Upton, Crockett, Howard, Glasscock, Mitchell (Sept. 29, 1933)	$ 70
Ector, Winkler and Pecos Counties and Lea County, New Mexico (Sept. 29, 1933)	.78
Pecos County, Yates shallow Pool (Sept. 29, 1933)*	.68
Jones and Fisher Counties*. See gravity table	

Note—Effective September 29, 1933, by Humble Oil & Refining Co., Texas Co., Gulf Pipe Line Co., Shell Petroleum Corp., Magnolia Petroleum Co., and by Stanolind Oil & Gas Co. in Winkler County, Texas.

*Shell Petroleum Corp.

Gulf Coast

Grade A and Grade B specifications discontinued by leading buyers.

	(See gravity table)
Tomball (see note)*	$1.15
Livingston (Sept. 29, 1933)†	1.00
Cleveland (Jan. 11, 1934)	1.00
Greta (Sept. 29, 1933)	.85
Refugio, light	(See gravity table)
Refugio, heavy (Sept. 29, 1933)‡	.85
Markham and High Island	(See Gulf Coast gravity table)
Conroe	(See Conroe gravity table)
Bosco, La. (Jan. 18, 1935)§	$.90

Note—Tomball, effective September 29, by Humble Oil & Refining Co. and October 2 by Magnolia Petroleum Co., and November 10 by Stanolind Crude Oil Purchasing Co.

*Greta posted by Texas Co. †Shell Petroleum Corp. ‡Refugio heavy by Humble Oil & Refining Co. Cleveland (Liberty County) posted by Magnolia Petroleum Co. §Bosco posted by Pure Oil Co.

South Central and Southwest Texas

(See note below table)

Darst Creek	$.87
Mirando	.80
Luling (Sept. 29, 1933)	.75
Pettus	1.05
Salt Flat	.87
Lytton Springs (Sept. 29, 1933)	.85
Duval County (Sept. 29, 1933)	.80
Saxet	.85

Note—Effective on September 29 by Humble Oil & Refining Co. in Darst Creek, Mirando, Pettus, Salt Flat and Saxet. Effective September 29 in Darst Creek by Gulf Pipe Line Co. and Texas Co. Effective October 2 by Magnolia Petroleum Co. Effective in Pettus and Salt Flat on September 29 by Humble Oil & Refining Co. and Gulf Pipe Line Co. Luling and Lytton Springs by Magnolia Petroleum Co. Duval County by Texas Co. Saxet, effective September 29, by

(Continued on Page 35)

TANK WAGON MARKETS

Quotations for gasoline and kerosene in United States, as furnished by the larger marketing concerns, include taxes

April 30, 1935

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline quoted is the regular or standard grade. In most marketing areas a third grade and a premium grade are also available.

Discounts

Under the standard form of commercial consumer contract which went into effect March 1, 1934, save in California, Oregon, Washington, Arizona and Nevada, a discount of 1 cent a gallon off tank wagon or 3 cents a gallon off retail prices is permitted for purchases running between 4,000 and 10,000 gallons a month, or 4 cents a gallon off retail prices for purchase in lots of more than 10,000 gallons a month. The minimum delivery is 25 gallons.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline: Tank wagon	Service station	Incl'ds tax	Kero. tank wagon
Denver, Colo.	18.0	20.0	5.0	11.0
Pueblo	17.0	19.0	5.0	12.0
Grand Junction	20.5	22.5	5.0	15.0
Casper, Wyo.	18.5	20.5	5.0	11.5
Cheyenne	18.5	20.5	5.0	13.0
Butte, Mont.	21.0	23.0	5.0	17.5
Billings	22.0	24.0	6.0	16.5
Helena	23.0	25.0	6.0	17.5
Great Falls	19.5	21.5	6.0	17.5
Salt Lake, Utah	21.0	23.0	5.0	16.0
Boise, Idaho	22.5	24.5	6.0	18.0
Twin Falls	22.5	24.5	6.0	18.0
Albu'que, N. M.	20.0	22.0	*6.5	13.0

*One-half cent city tax.

Effective March 1, 1934, discount to dealers with or without contract throughout Continental territory: Undivided dealer discount off service station price, 4 cents; divided dealer accounts, 3½ cents.

Standard Oil Co. (Indiana)

	Gasoline: Tank wagon	Service station	Incl'ds tax	Kero. tank wagon
Chicago	14.9	16.9	4.0	9.0
Decatur, Ill.	14.9	16.9	4.0	9.5
E. St. Louis	14.5	16.5	4.0	9.1
Joliet	14.9	16.9	4.0	9.5
Peoria	14.0	14.9	4.0	9.5
Quincy	14.7	16.7	4.0	9.3
Davenport, Ia.	14.8	16.8	4.0	9.5
Des Moines	14.7	16.7	4.0	9.3
Mason City	15.1	17.1	4.0	9.7
Sioux City	14.9	16.9	4.0	9.5
Duluth, Minn.	15.7	17.7	4.0	10.3
Mankato	15.3	17.3	4.0	9.9
Minneapolis	15.3	17.3	4.0	9.9
LaCrosse, Wis.	16.3	18.3	5.0	9.9
Green Bay	16.6	18.6	5.0	10.2
Milwaukee	16.2	18.2	5.0	9.8
Madison	16.3	18.3	5.0	9.9
Detroit, Mich.	16.4	18.4	4.0	9.1
Grand Rapids	16.3	18.3	4.0	10.3
Saginaw	16.5	18.5	4.0	10.5
Evansville, Ind.	16.6	18.1	5.0	10.0
Indianapolis	16.8	18.8	5.0	10.2
South Bend	17.0	19.0	5.0	8.0
Fargo, N. Dak.	16.3	18.3	4.0	10.9
Huron, S. Dak.	16.8	18.8	5.0	10.4
Sioux Falls	16.2	18.2	5.0	9.8
Kans. Ci., Mo.*	14.2	16.2	4.0	7.6
Springfield	13.9	15.9	4.0	8.5
St. Louis	14.6	16.6	3.5	7.6
St. Joseph*	14.3	16.3	4.0	8.9
Wichita, Kans.	13.8	15.8	4.0	6.0
Bartlesville, Ok.	16.0	18.0	5.0	8.5

*State tax 2 cents, 1-cent city tax and 1-cent federal tax.

Discounts to dealers: Undivided accounts, 1½ cents on premium and regular and 2½ cents on third grade off service station prices; divided accounts one-half cent less than undivided. Where prices are more than 1 cent below normal, the discounts are one-half cent less than above.

Stanolax Furnace Oil in Chicago

Effective Feb. 16, 1935, f.o.b. Chicago tank wagon prices: Range oil, less than 80 gallons, 8¼ cents; 80-149 gallons, 7½ cents; 150 gallons and more, 7 cents. No. 1 (36-40 lt. stw. zero), less than 100 gallons, 8½ cents; 100-149 gallons, 7½ cents; 150 gallons or more, 7 cents; No. 2 (30-34, stw. zero), less than 150 gallons, 8 cents; No. 3 (22-26, zero), less than 150 gallons, 7 cents; No. 4 (12-16 zero), less than 400 gallons, 7 cents; viscosity of No. 4, 85 and 100° F.; No. 5, less than 400 gallons, 5¾ cents. For deliveries of more than stated quantities of Nos. 2, 3, 4 and 5, deduct 1 cent.

(Note: Range oil not quoted by Standard; quotation on this product by Burning Oil Distributors Association.)

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline: Tank wagon	Service station	Incl'ds tax	Kero. tank wagon
Atlanta, Ga.	18 0	20 0	7 0	12.0
Augusta	19.5	21 0	7.0	13.0
Macon	20.0	22.0	7.0	13.0
Savannah	18.5	20 5	7.0	14.0
Birm'ham, Ala.	21.0	23.0	8.0	10.0
Mobile	20.0	22.0	8.0	11.0
Montgomery	22 0	24 0	8 0	15.5
Jackson, Miss.	19 0	21 0	7.0	11 0
Vicksburg	19 0	21.0	7.0	14.5
Jack'ville, Fla.	18.5	20 5	8 0	11.5
Miami	18 5	20 5	8 0	13.5
Pensacola	20 0	22 0	8.0	11.5
Tampa	18.5	20 5	8 0	12 5
Lexington, Ky.	19.0	21 0	6 0	12 5
Covington	17.5	19.0	6 0	12.5
Louisville	18 0	20.0	6.0	10.0
Paducah	18.0	20 0	6 0	8.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city and county tax of 2 cents on gasoline and one-half cent on kerosene. Kerosene prices in Georgia and Mississippi include 1 cent state tax; in Alabama, an inspection fee of one-half cent on kerosene and one-fortieth cent on gasoline; in Florida an inspection fee of one-eighth cent on kerosene and gasoline. To Pensacola, Mobile and Birmingham state taxes on gasoline add 1 cent city tax.

Southwestern District

MAGNOLIA PETROLEUM CO.

	Gasoline: Tank wagon	Service station	Incl'ds tax	Kero. tank wagon
Dallas, Tex.	15.0	17.0	5.0	8.0
Fort Worth	14.0	16.0	5.0	8 0
Houston	15.0	17.0	5.0	8.0
San Antonio	16.0	18.0	6.0	8.0
El Paso	17.0	19.0	5.0	10.0
Muskogee, Ok.	16.0	18.0	5.0	6.0
Okla. City	16.0	18.0	5 0	8 0
Tulsa	16.0	18.0	5.0	8.0
Ft. Smith, Ark.	14.0	17.5	5.0	8.0
Little Rock	16.5	20.0	7.5	8.0
Texarkana	15.0	17.0	5.0	7.0

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline: Tank wagon	Service station	Incl'ds tax	Kero. tank wagon
Atl'tic City, N.J.	12.9	16.4	4 0	9.8
Newark	13.0	16.5	4.0	7.5
Annapolis, Md.	14.3	17.8	5.0	10.0
Baltimore	13.8	17.3	5.0	8.5
Cumberland	15.3	18.8	5.0	12.7
Wash'g'n, D. C.	12 0	15.5	3.0	9.5
Danville, Va.	16.3	19.8	6 0	12.9
Norfolk	14.8	18.3	6 0	11.3
Petersburg	15.5	19.0	6.0	11.4
Richmond	15.5	19.0	6.0	11.7
Roanoke	15.0	17.0	6.0	12 9
Charles'n, W.Va.	14 7	18.2	5.0	12.6
Parkersburg	14.0	17.5	5.0	11.2
Wheeling	14.75	18.0	5 0	12.2
Charlotte, N. C.	18.1	21.6	7.0	13.5
Hickory	18.4	21.9	7.0	13.7
Mt. Airy	18.4	21.9	7.0	13 8
Raleigh	17 9	21.4	7.0	13.3
Salisbury	17.25	20 0	7.0	13.6
Charleston, S.C.	15 9	19 4	7.0	11.3
Columbia	17.7	21.2	7 0	13.2
Spartanburg	16.75	19 0	7.0	13.5

Effective October 23, tank wagon gasoline refers to dealer instead of retail prices.

Price basis to dealers: Undivided dealers at regular price less one-half cent. Discount for kerosene, 1 cent off tank wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except in New Jersey, where no discount is given.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline: Tank wagon	Service station	Incl'ds tax	Kero. tank wagon
Omaha	17.3	19.3	6 0	10.1
McCook	18.0	20 0	6 0	10.8
Norfolk	17.7	19.7	6.0	10.5
North Platte	18.1	20.1	6 0	10.1
Scottsbluff	18.8	20.4	6.0	11.6

Note: Discounts to dealers; where service station gasoline prices are (maximum overall, including rent) as follows: Reliance, 2½ cents; Standard Red Crown, 3½ cents; Red Crown Ethyl, 3½ cents.

Where service station gasoline prices are below normal, resellers' allowances are reduced one-half of the amount below normal, down to the following (minimum overall, including rent): Reliance, 2 cents; Standard Red Crown, 3 cents; Red Crown Ethyl, 3 cents. Discounts to consumers for tank wagon deliveries covered only by Standard Commercial Consumers Contract, effective January 1, 1935.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline: Tank wagon	Service station	Incl'ds tax	Kero. tank wagon
N. Orleans, La.	17.5	21 0	‡8.0	†13 0
Baton Rouge	16.5	20.0	†7.0	12.0
Alexandria	17.0	20.5	†*8.0	10 0
Lafayette	17 5	21 0	‡*8.0	12.0
Lake Charles	17.5	21.0	†*8.0	12.0
Shreveport	15.5	19 0	†7.0	12.0
Knoxville, Tenn.	19 5	23.0	8 0	13 5
Memphis	17.5	21.0	8.0	10.5
Chattanooga	19.0	22.5	8.0	11.0
Nashville	18.5	22 0	8 0	13.0
Bristol	18 3	21 3	8 0	14.0

*Includes city tax of 1 cent.

‡Includes 2-cent parish tax. †Includes 1-cent parish tax.

Effective October 23, tank wagon gasoline refers to dealer instead of retail prices.

Price basis to dealers: Undivided dealers at dealer price less one-half cent.

Louisiana kerosene prices include 1-cent state tax.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA.

	Gasoline: Tank wagon†	Posted retail	Incl'ds tax	Kero. tank wagon
San Francisco	16.5	18.5	4.0	11.5
Los Angeles	16.0	18.0	4.0	10.5
Fresno, Calif.	17.0	19.0	4.0	12.0
Phoenix, Ariz.	20.0	22.0	6.0	‡18.0
Reno, Nev.	19.0	21.0	5.0	13 0
Portland, Ore.	19.0	21.0	6.0	13.0
Seattle, Wash.	19.0	21.0	6.0	13.5
Tacoma	19.0	21.0	6.0	13.5
Spokane	22.0	24.0	6.0	16.5

*Retail prices posted by Standard Stations, Inc., a subsidiary.

†Prices are at company's plant or depots, as company does not operate stations. A 4-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent.

‡Includes 5-cent state tax.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO

	Gasoline: Tank wagon	Service station	Incl'ds tax	Kero. tank wagon
Phil'delphia, Pa.	14.0	16.0	4.0	9.0
Pittsburgh	15.0	17.0	4.0	10.0
Allentown	14.5	16.5	4.0	10.0
Erie	15.0	17.0	4.0	9.0
Scranton	15.0	17.0	4.0	10.0
Altoona	15.0	17.0	4.0	10.0
Dover, Del.	14.5	18.5	4.0	10.0
Wilmington	14.5	16.5	4.0	9.0
Springf'd, Mass.	13.0	14 0	4.0	8.0
Worcester	13.1	14 6	4 0	8 5
Hartford, Conn.	12 1	15.6	3 0	7.5
New Haven	12.0	15.5	3 0	8 5
Providence, R.I.	11.8	13.3	3.0	7 0

Note—Tank wagon prices are those applicable to consumers purchasing lots of 100 or more gallons in one delivery.

Canada*

Imperial 2-Star Gasoline

IMPERIAL OIL, LTD.

	Gasoline: Tank wagon	Service station	Incl'ds tax	Kero. tank wagon
Hamilton, Ont.	†22.0	25.0	6.0	17.5
Toronto, Ont.	†22.0	25.0	6.0	17.5
Brandon, Man.	30.3	33.3	7.0	21.8
Winnipeg, Man.	27.7	31.7	7.0	20.2
Regina, Sask.	29 0	32.0	7.0	21 5
Saskatoon, Sask	31.8	34.9	7.0	24 3
Edmonton, Alta.	32.2	35.2	7.0	23 7
Calgary, Alta.	29.5	32.5	7.0	21.0
Vancouver, B.C.	27.0	30.0	7.0	24.0
Montreal, Que.	24.0	27.0	6.0	17.0
St. John, N.B.	26.0	30.0	8.0	19.5
Halifax, N. S.	26.0	30.0	8.0	19.5

*Imperial gallon used in Canada. †Governed by service station price.

Maritime provinces, all dealers 4 cents off service station price. All other provinces open dealers 3 cents per gallon off service station price (except Toronto and Hamilton cities which are—open dealers 2½ cents off service station price) 1 cent additional to 100 per cent accounts.

Naphtha

STANDARD OIL CO (INDIANA)

	Tank wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax nor 2 per cent retail occupational tax.

Prices f.o.b. Chicago, March 12, 1935. Each of above prices subject to discount of 1 cent per gallon for 150-gallon lots if covered by contracts.

New York and New England

SOCONY-VACUUM CO., INC

	Gasoline: Posted dealer	Service station	Incl'ds tax	Kero. tank wagon
Albany, N. Y.	14.0	17.5	5.0	9.5
*Met. New York	13 625	17.0	5.0	7.75
*Br'kl'n, Queens	13.375	16.5	5.0	7.75
Buffalo	14.7	18.2	5.0	8.0
Rochester	14.7	18.2	5.0	8.5
Syracuse	14.5	18.0	5.0	8.75
Boston, Mass.	12.8	16.3	4.0	7.5
Portland, Me.	14.5	18.0	5.0	8.75
Manch't'r, N.H.	14.6	18.1	5.0	9.0
Burlington, Vt.	16.0	19.5	5.0	9.0

*Includes 2 per cent city sales tax.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline: Tank wagon	Service station	Incl'ds tax	Kero. tank wagon
Ohio points	16.5	18.5	5.0	*12 5

*Includes state tax of 1 cent, effective July 22.

Retail Price Changes

Regular-Grade Gasoline and Kerosene

Standard Oil Co. of Louisiana, April 13, reduced tank wagon gasoline .5 cent and station gasoline 1 cent in Bristol.

Standard Oil Co. of New Jersey, April 12, advanced tank wagon and station gasoline .4 cent in Charleston. April 18, reduced tank wagon gasoline .25 cent and station gasoline .5 cent in Roanoke; April 21, reduced tank wagon gasoline .25 cent and station gasoline .5 cent further.

Standard Oil Co. of Ohio, April 25, advanced tank wagon and station gasoline .25 cent throughout Ohio.

Socony-Vacuum Oil Co., Inc., April 24, advanced tank wagon gasoline .125 cent and station gasoline 1 cent in Metropolitan New York; advanced tank wagon gasoline .375 cent and station gasoline 1 cent in Brooklyn, Queens. April 26, advanced tank wagon gasoline 1 cent and station gasoline 2 cents in Boston.

Magnolia Petroleum Co., April 25, advanced tank wagon and station gasoline 1 cent in Dallas. April 26, advanced tank wagon and station gasoline 1 cent in El Paso.

Continental Oil Co., April 24, reduced tank wagon kerosene 2 cents in Denver.

J. R. McWilliams Named Tulsa Chapter Chairman

The Tulsa chapter of the American Petroleum Institute, Division of Production was formally organized April 29 by the election of J. R. McWilliams, in charge of the proration department of the Carter Oil Co., Tulsa, as chairman, and H. M. Cosgrove, executive manager of the Purchasing Agents Association of Tulsa, first vice chairman, and B. P. Sibole, vice president of the Stanolind Pipe Line Co., second vice chairman. Selection of a secretary was left to the executive committee.

The advisory committee will consist of J. W. Bates, of Helmerich & Payne, Inc.; J. B. Steele, Kewanee Oil & Gas Co.; Arch Hayden, Minnehoma Oil & Gas Co.; Russell S. Knappen, Gypsy Oil Co.; John S. Freeman, Skelly Oil Co.; Ralph B. Roark, Shell Petroleum Corp.; Jesse H. Hill, Texas Co.; W. W. Bailey, Sinclair Prairie Oil Co.; Charles P. Dimit, Phillips Petroleum Co.; A. W. Ambrose, Empire companies; Ray E. Miller, Hanlon-Buchanan, Inc., and R. L. Langenheim, University of Tulsa.

TRYING TO LOCATE FATHER

Friends of Bronson Beardmore, a small boy whose mother has died, are trying to locate the father, who is thought to be in the oil business in Oklahoma. The boy can be reached through Mrs. E. L. Kinsolving, 800 West Arlington Street, Fort Worth, Tex.

Strong Market and Demand Encourage Marketers in Chicago Trade Area

By SPECIAL CORRESPONDENT

CHICAGO, Apr. 29.—The oil trade hereabouts is extracting considerable encouragement from two aspects of the industry's affairs currently. The first is the relatively good volume of business being done in all petroleum products, especially gasoline. The second is the strength in the oil price structure, also centered in gasoline.

Jobbers have been furnishing shipping instructions on their contracts at a high rate, indicating that their current sales are heavy.

Offerings Small

Comparatively little material is being offered to the marketing trade by car lot marketers or by Mid-Continent refiners, except at higher prices.

Tank Wagon and Service Station

Tank wagon and service station prices are sufficiently firm and healthy to be supplying a stable foundation to the tank car gasoline market. Price cutting continues in limited fashion but it is not being permitted to disturb the general market situation. Some private brand sellers persist in selling at a discount but such reductions, as well as the concessions being offered to motorists by some major dealers, are not large and seem to be rather uniform. Really bad conditions are extremely rare and far apart. On a rising tank car market it once more is proving difficult to cut retail prices on any extensive basis.

Kerosene and Tractor Fuels

After weeks of lethargy while it was expected to come to life, kerosene finally is improving in tone and in price. Buying of this product and of tractor fuels in the last few days has exceeded substantially that of a week or two earlier. Some refiners, who have not been making large quantities, are far behind on kerosene shipments. Large numbers of tractors are at work in central regions. It has been hoped that tank wagon prices, now subnormal in many cases in Standard of Indiana territory, would be adjusted upward soon. At any rate, tone in these items is much firmer.

Heating Oils

The heating oils have hung on much later than most people expected they would do. It is hard to buy these products, even so late in the season. The late season consumption has persisted in fair volume. Output seems to have been quite low recently.

Coke

Coke has held its own in fairly good shape, and is still a rather firm product, prices unchanged.

Wax

A slightly better tone is noted in wax, with prices firmer, but unchanged. There are some inquiries at this time. Stocks remain rather large.

Industrial Oils

Industrial fuel oils are still having a hard time to get started into any real improvement, and movement continues to be held up by the fact that the general industrial situation has not shown major improvement. Nevertheless, certain specific items are in call. Industrial gas oil is subject to much interest at higher quotations and it is quite scarce.

Lubricants

Lubricating oil reports are mixed. Conditions in the East have been dull. New business in the open market elsewhere has been featureless.

Solvents

Solvents and naphthas are marking time. Michigan and eastern products are still offered at concessions.

Crude Oil Prices

(Continued from Page 33)

Humble Oil & Refining Co. and Texas Co. Effective September 20 in Salt Flat by Shell Petroleum Corp.

Rocky Mountain States

Iles, light (Sept. 29, 1933)	$.96
Iles, heavy (Sept. 29, 1933)	.90
Florence, Colo. (June 17, 1933)	.80
Fort Collins and Wellington, Colo. (June 17) (See Salt Creek prices)	
Big Muddy (Sept. 29, 1933)	1.01
Frannie, light (May 1, 1934)	.70
Frannie, heavy (Sept. 29, 1933)	.62
Salt Creek and LaBarge (Sept. 29, 1933) See Stanolind Mid-Continent price schedule	
Grass Creek, light (Sept. 29, 1933)	1.18
Grass Creek, heavy (Sept. 29, 1933)	.92
Elk Basin (Sept. 29, 1933)	1.18
Rock Creek (Sept. 29, 1933)	1.02
Lance Creek (Dec. 15, 1933)	.93
Hudson (June 2, 1931)	.65
Lost Soldier (Sept. 30, 1933)	.88
Hamilton Dome, all grades (Feb. 16, 1935)	.57
Torchlight (Sept. 29, 1933)	1.15
Greybull (Sept. 29, 1933)	1.18
Pondera (Sept. 29, 1933)	1.25
Sunburst (Sept. 29, 1933)	1.35
Cat Creek, Montana	1.07
Hogback (Sept. 29, 1933)	1.11
Lea County, N. Mex. (Sept. 29, 1933)	.75
Maljamar (Sept. 29, 1933)	.70
Artesia-Jackson (Dec. 1, 1933)*	.75

Note—Salt Creek, Torchlight, Elk Basin, Grass Creek, Frannie, Greybull, Hogback and Iles by Stanolind Oil & Gas Co. Elk Basin, Grass Creek light, Big Muddy, Rock Creek and Sunburst by Ohio Oil Co. Lost Soldier posted by Producers & Refiners Corp. Artesia, Jackson and Maljamar posted by Continental Oil Co. Lea County, effective September 29, 1933, by Humble Oil & Refining Co. and other buyers; Fort Collins, Wellington, Orchard, Florence, Big Muddy, Cat Creek, Rattlesnake and Table Mesa by Continental Oil Co. Osage posted by Arro. Hamilton Dome, Wyo., by Stanolind Oil & Gas Co. Pondera, Mont., by Ohio Oil Co. (Stanolind Oil & Gas Co., effective January 1, 1935, posted $1 per barrel in Pondera.)

*Continental Oil Co.

North Louisiana and Arkansas

Smackover, Ark. (all grades)	$.70
Tullos, Urania, La. (Jan. 13, 1934)	.87
Nevada, Ark. (Sept. 29, 1933)	.60
East El Dorado (Sept. 29, 1933)	.70
Converse, La. (Mar. 17, 1934)	1.03
Elm Grove, La. (Sept. 29, 1933)	.75
Holly, La. (Nov. 17, 1934)	1.03
Pleasant Hill, La. (Mar. 17, 1934)	1.03
Zwolle, La. (Mar. 17, 1934)	1.03
Champagnolle, Ark. (Mar. 17, 1934)	.81
Lisbon, Ark. (Mar. 17, 1934)	1.03
Stephens, Ark. (Sept. 29, 1933)	.70
Urbana, Ark. (Mar. 17, 1934)	.60
Other fields (See gravity table)	

Note—Smackover: Effective September 29, 1933, Texas Co., Magnolia Petroleum Co., Standard of Louisiana, Louisiana Oil Refining Corp., Gulf Refining Co. and Phillips Petroleum Co. East El Dorado posted by Magnolia Petroleum Co. and Gulf Refining Co., Nevada by Standard Oil Co. of Louisiana. Urbana posted by H. L. Hunt, Inc. and Louisiana Oil Refining Co. Converse, Holly, Zwolle and Urbana by Standard Oil Co. of Louisiana; Elm Grove by Simmons Oil & Refining Co.; Pleasant Hill by Standard Oil Co. and Magnolia Petroleum Co. Champagnolle by Standard Oil Co. and Lion Oil & Refining Co.

Eastern States

TIDE WATER PIPE CO.
(Effective Feb. 4, 1935)

Bradford, Pa.	$2.35
Allegany, N. Y.	2.35

SOUTH PENN OIL CO.
(Effective Feb. 4, 1935)

Pennsylvania Grade Oil in National Transit Lines (Bradford Field)	$2.35
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	2.03
Pennsylvania Grade Oil in Eureka Pipe Line lines	1.97
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.87
Corning Grade Oil in Buckeye Pipe Line Co.'s lines (Oct. 1 1933)	1.35

PENNZOIL CO.
(Effective Feb. 4, 1935)

Pennsylvania Grade Oil in National Transit Lines:	
Group A Includes Cochran, Franklin, Hamilton and Doolittle districts.	$2.37
Group B Includes Titusville district.	2.35
Group C Includes Turkey and Tidioute districts.	2.35
Group D	2.34
Includes Bear Creek and Porkey districts.	
Group E	2.31
Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredin, McJunkin, Jameson, Kennerdell, Emienton, Tiona, Lacey and Kinzua districts	
Price depends on length of pipe line haul to plant at Oil City.	

PURE OIL CO.
(Effective Jan. 4, 1935)

Cabin Creek, W. Va.	$1.83
Bradford Hollow, W. Va.	1.83
Kelly Creek, W. Va.	1.77

CREW-LEVICK CO.
(Effective Jan. 4, 1935)

Oil City-Titusville	2.13

Middle Western States

OHIO OIL CO.

Lima (Feb. 1, 1935)	$1.18
Illinois (Jan. 5, 1934)	1.11
Princeton, Ind. (Jan. 5, 1934)	1.11
Plymouth	Shut in
Western Kentucky (May 26, 1934)	1.03
Midland, Mich. (Sept. 30, 1933)*	1.03
West Branch, Mich.	.84
Oceana, Mich. (Oct. 5, 1933)	.9
Somerset, Ky. (Sept. 30, 1933)	1.13

*Posted by Pure Oil Co. and Simrall Pipe Line Co. Producers Pipe Line Co. pays 4 cents per barrel over Pure Oil Co.'s posted prices. West Branch, Mich., posted by Simrall Pipe Line Co. Somerset, Ky., crude purchased by Ashland Refining Co., Ashland, Ky., and posted price includes premium. Oceana posted by Old Dutch Refining Co. and Naph-Sol Refining Co.

Canada

Ontario (September 9, 1933):	
Petrolia*	$2.10
Oil Springs	2.17
Turner Valley (May 21, 1934):†	
Clear naphtha	$2.55
Discolored naphtha	2.3
Crude oil, 50 gravity	2.15
Crude oil, 45 to 49.9	2.07
Crude oil, 40 to 44.9	1.87

*Imperial Oil, Ltd. †Imperial Oil, Ltd and Regal Oil & Refining Co.

Mexico

Panuco*	$1.01

*F.o.b. ship, based on March transactions and exclusive of production and export taxes and bar dues.

California Crude Oil Prices

STANDARD OIL CO. OF CALIFORNIA
(Effective September 6, 1933)

For current purchases of crude oil at the well (unless otherwise specified). (All gravities above those quoted take highest price offered in that field.)

Gravity—	Long Beach	Seal Beach, Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda, Brea Canyon	Athens-Rosecrans	Torrance	Richfield	Whittier, La Habra	Montebello	Santa Fe Springs	La Habra-Coyote	Midway-Sunset, Elk Hills, Buena Vista Hills	Lost Hills	Coalinga	Coyote
14-14.9	$.65	$.65	$.65	$.65	$.65	$.65	....	$.65	$.65	$.65	$.65	....	$.65	$.57	$.57	$.57	$.65
15-15.9	.65	.65	.69	.69	.66	.69	....	.66	.65	.65	.65	....	.65	....	....	....	.65
16-16.9	.66	.65	.72	.73	.69	.73	....	.69	.67	.68	.65	....	.65	....	....	....	.65
17-17.9	.69	.65	.75	.76	.73	.76	....	.72	.70	.71	.65	....	.68	....	....	....	.68
18-18.9	.72	.68	.78	.80	.76	.79	....	.75	.74	.74	.65	....	.71	.61	.61	.59	.71
19-19.9	.75	.65	.81	.83	.80	.82	....	.78	.78	.78	.65	....	.74	.64	.65	.62	.74
20-20.9	.78	.68	.83	.87	.83	.85	....	.81	.82	.81	.66	....	.76	.67	.69	.65	.78
21-21.9	.81	.72	.86	.90	.87	.88	....	.85	.85	.84	.69	$.73	.81	.70	.73	.68	.81
22-22.9	.84	.76	.89	.94	.90	.92	....	.85	.89	.87	.72	.76	.84	.73	.76	.72	.84
23-23.9	.88	.81	.92	.97	.94	.95	$.53	.89	.92	.90	.76	.79	.87	.77	.79	.75	.87
24-24.9	.91	.85	.95	1.01	.97	.98	.56	.92	.97	.93	.80	.83	.90	.81	.82	.78	.90
25-25.9	.94	.89	.98	....	1.00	1.01	.90	.95	1.00	....	.85	.87	.92	.85	.85	.81	.93
26-26.9	.97	.93	1.01	....	1.04	1.04	.94	.98	1.04	....	.89	.90	.96	.89	.88	....	.96
27-27.9	1.00	.98	1.04	....	....	1.07	.97	....	1.08	....	....	.94	.99	.93	.91	....	.99
28-28.9	1.03	1.02	1.07	....	....	1.10	1.01	....	1.11	....	....	.98	1.02	.97	.94	....	1.02
29-29.9	1.06	1.05	1.09	....	....	....	1.04	....	1.15	....	....	1.01	1.05	1.01	.97	....	1.06
30-30.9	1.09	1.10	1.12	....	....	....	1.08	....	....	....	....	1.05	1.09	1.05	1.00	....	1.09
31-31.9	..	....	....	....	....	....	1.12	....	....	....	....	1.08	1.13	1.09	....	....	1.12
32-32.9	....	....	....	....	....	....	1 15	....	....	....	....	1.12	1.15	1.13	....	....	1.15
33-33.9	....	....	....	....	....	....	....	....	....	....	....	1.16	1.18	1.17	....	....	1.18
34-34.9	....	....	....	....	....	....	....	....	....	....	....	1.19	1.21	..	....	....	1.21
35-35.9	....	....	....	....	....	....	....	....	....	....	....	1.23	....	....	....	....	....
36-36.9	....	....	....	....	....	....	....	....	....	....	....	1.26	....	....	....	....	....
37-37.9	....	....	....	....	....	....	....	....	....	....	....	1.30	....	....	....	....	....
38-38.9	....	....	....	....	....	....	....	....	....	....	....	1.34	....	....	....	....	....

Additional Standard Oil Quotations

Mountain View—Effective July 2, 1934, the following are the prices of the Standard Oil Co. of California for its current purchases of crude oil at the well in the Mountain View Field: 14 to 19.9 degrees, 57 cents; 20-20.9, 58 cents; 21-21.9, 59 cents; 22-22.9, 61 cents; 23-23.9, 63 cents; 24-24.9, 66 cents; 25-25.9, 69 cents; 26-26.9, 72 cents; 27-27.9, 75 cents, 28-28.9, 78 cents; 29-29.9, 81 cents; 30-30.9, 84 cents; 31-31.9, 87 cents; 32-32.9, 90 cents; 33 degrees and above, 93 cents.

Elwood Terrace—F.o.b. ship, 33 degrees, $1.03; 34 degrees, $1.06; 35-35.9, $1.09; 36-36.9, $1.12; 37 degrees and over, $1.15.

Newhall—14 degrees and over, 57 cents.

McKittrick and Kern River—14 degrees and over, 57 cents.

Wheeler Ridge—14 to 17.9 degrees, 57 cents; 18-18.9, 58 cents; 19-19.9, 61 cents; 20-20.9, 64 cents; 21-21.9, 67 cents; 22-22.9, 70 cents; 23-23.9, 73 cents; 24-24.9, 76 cents; 25 degrees and over, 79 cents.

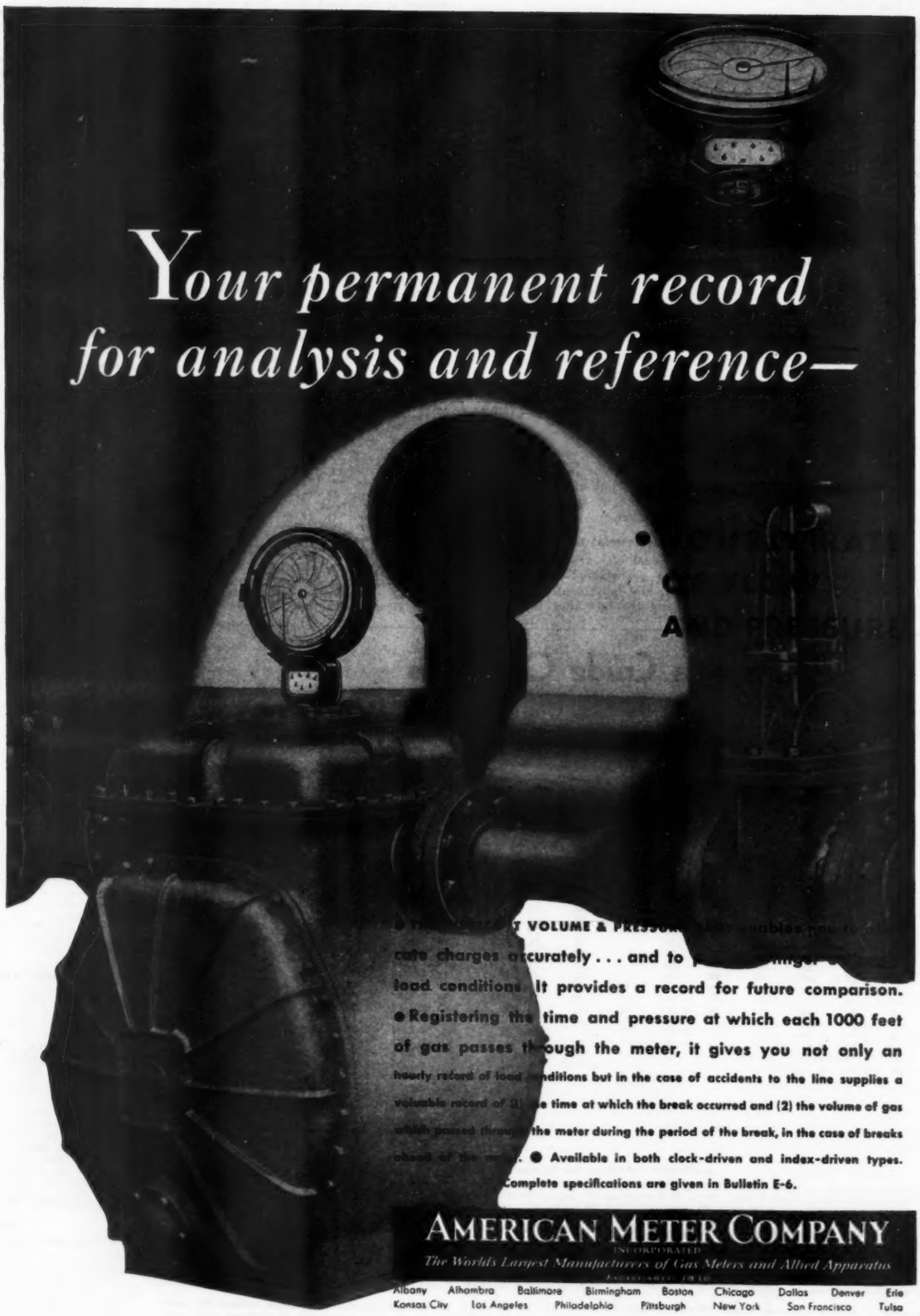
Kettleman Hills—33-33.9 degrees, 93 cents; 34-34.9, 96 cents; 35-35.9, 99 cents; 36-36.9, $1.02; 37-37.9, $1.05; 38-38.9, $1.08; 39 degrees and over, $1.11.

The Texas Co. posted in Shiells Canyon, South Mountain and Santa Paula as follows: 14 to 17.9, 57 cents; 3 cents added for each degree up to and including 26-26.9 degrees at 84 cents; then 4 cents added for each degree up to and including 30 degrees and over at $1. Company posts Standard Oil Co.'s Montebello prices in Montebello and North Whittier, and posts Standard Oil Co. prices in Signal Hill, Alamitos Heights, Huntington Beach, Torrance, Richfield and Santa Fe Springs, all effective September 6.

General Petroleum Co. posts Standard Oil Co. prices in Athens, Rosecrans and Signal Hill; Alamitos Heights up to 26-26.9; Santa Fe Springs up to 25-25.9; Richfield up to 26-25.9; Brea Canyon and Olinda up to 25-25.9, and Torrance up to 25-25.9.

Union Oil Co., effective September 6, posts same price as Standard Oil Co. in all fields in which both purchases, excepting that in Athens-Rosecrans, Union Oil Co. posts 21-21.9, 72 cents, and 33--33.9, $1.18; 34-34.9, $1.21, and 35-35.9, $1.24.

Associated Oil Co., effective September 6, posted same prices for the same grades as Standard Oil Co. of California, excepting that in some fields its gravity scale stops as follows: Huntington Beach, 26 degrees and over; Seal Beach and Alamitos Heights, 26 degrees and over; Coyote Hills, 23 degrees and over; Richfield, 25 degrees and over; Torrance, 25 degrees and over; Inglewood, 24 degrees and over; Santa Fe Springs, 25 degrees and over; Midway-Sunset, Elk Hills, Buena Vista Hills, 30 degrees and over. Also Associated pays 52 cents for oil of 11 to 13.9 gravity in McKittrick, Kern Front, Kern River, Midway-Sunset, Elk Hills, Buena Vista Hills and Coalinga.



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NEWS FOR PETROLEUM REFINERS

New Cracking Unit Begins Operation in Michigan

Michigan's most modern cracking unit, the first to be erected by any independent refinery, will be completed this week by the Naph-Sol Refining Co. at its plant in the Muskegon oil field.

A construction crew of about 100 men working day and night for the past few weeks is expected to finish the installation of the $225,000 Dubbs unit on contract schedule Wednesday, May 1, it was announced by Walter E. Anderson, president and general manager. Final adjustments may require several days more with regular operations due to start on or before Saturday, May 4.

Two large fractionating towers, thousands of feet of piping and all other construction except the high pressure furnace to be operated at high temperatures have been completed. Workmen today were rushing construction and final insulation of the furnace.

Principal products of the new unit specially designed to handle Michigan crude will be a high grade gasoline and a large quantity of by-product gas. The unit will have a capacity of about 1,200 bbls. of charging stock and a daily output of up to 25,000 gallons of gasoline and from 450,000 to 600,000 cubic feet of gas. Since the gas will have a heat content of about 1,600 to 1,800 B.t.u. it will be the equivalent of nearly 1,000,000 cubic feet a day at 1,150 to 1,200 B.t.u., or the average heat content of dry gas wells in Michigan fields.

The new supply of gas will assure continued operation of the West Michigan pipe line system to Muskegon and Muskegon Heights industries for a period of years. The Naph-Sol company also has made provisions for possible future installation of another cracking unit which would double the supply of gas as well as the gasoline output. This further installation will depend upon the success of the first unit and market developments.

The output of refined products, heretofore including principally naphthas, kerosene, furnace and other fuel oils will be nearly doubled by the single unit with little increase in the daily crude runs expected to average about 2,500 bbls. Most of the crude now comes from Central Michigan fields, including Ogemaw County, the big Porter Pool in Midland County, and the new Crystal Township, Montcalm County, producer.

Distribution Headquarters Enlarged by White Star

MUSKEGON, Mich., Apr. 30.—Final contracts have been let and work started on several buildings and miscellaneous structures to be erected at the new $175,000 storage plant and distribution headquarters of the White Star division, Socony-Vacuum Oil Co., Inc., at Muskegon, Mich.

Vernie M. Cline and Andrew Lipton, local general contractors, have been awarded the contracts for building a combined warehouse and garage 32 by 80 feet in dimensions and for moving a small office building, 15 by 35 feet, from the company's present Park Street bulk plant formerly owned by the Cardinal-Dixie Oil Co., independent distributors.

Several small gravity loading tanks also will be moved to the new site where Cline and Lipton also have started construction of railroad tank car loading racks on the Grand Trunk Western siding. Concrete footings for the small bulk plant tanks also are being built.

Erection of the smallest of three storage tanks, a cylindrical unit with a capacity of 7,700 bbls., has been completed. First of two large spheroid tanks, one of 60,000 bbls. and the other of 80,000 bbls. capacity, is expected to be completed about May 15, or two weeks later than anticipated. These are being erected by the Chicago Bridge & Iron Works.

Love Construction & Engineering Co., local marine contractors, are expected to complete a loading wharf near the Grand Trunk carferry dock this week. Coolsaet Brothers have completed a double 6-inch, 1½-mile pipe line. The plant will be ready for a first boat shipment of gasoline the latter part of May.

Oil Refineries Spent Billion Dollars for Supplies and Power During Past Year

The average large petroleum refinery in the United States spent approximately $278,379 for materials, containers, fuel and electric power, and $233,468 for wages, and produced goods valued at $357,696 in 1934, data compiled by the American Petroleum Institute reveals.

It is estimated that the 367 largest refineries purchased from other industries supplies and power at a total cost of $1,023,131,731. Wage earners, excluding salaried officers and employes, received a total of $85,683,204. Employment was furnished to 65,973 full and part-time workers. Total value of products is placed at $1,312,745,262.

The figures, based largely upon the Department of Commerce Census of Manufactures, present an incomplete picture of the American refining industry, it was explained, since operations of only the larger refineries are covered. All totals and averages would be increased were all refineries operating in the 35 refining states included. Totals and averages for the number of employes and wages earned were influenced by the employment of part-time workers.

Data for some of the larger refining states follow:

State	Number of refineries	Number of wage earners	Wages paid	Spent for materials, etc.	Value of products
California	48	6,858	$ 9,636,156	$168,571,813	$212,939,324
Oklahoma	43	4,664	5,969,965	55,774,481	74,255,041
Texas	90	15,795	18,700,444	226,634,908	71,446,111
Pennsylvania	37	8,495	11,557,572	123,179,057	42,337,273
Kansas	21	3,181	3,827,260	34,658,384	48,801,486
Montana	18	215	278,066	3,333,782	4,441,195
Wyoming	15	900	1,395,570	16,626,521	17,179,165

1934 Automotive Revenue Collections Decrease

Internal revenue collections from the automotive industries for the first nine months of the federal fiscal year, ending June 30, 1935, amounted to $200,046,351, a decrease of 15.6 per cent over the amount collected during the same period of the previous fiscal year.

The principal drop occurred in gasoline, revenue from this source decreasing some $40,000,000 as a result of the reduction in the federal gasoline tax rate from 1½ cents a gallon to 1 cent following the repeal of prohibition.

A decrease in the movement of oil by pipe line is also indicated in a reduction in pipe line taxes collected of approximately $500,000,000. All other excise taxes on automotive goods increased.

Automotive internal revenue collections from July 1, 1934, to March 31, 1935, as compared with collections during the period from July 1, 1933, to March 31, 1934, are shown in the accompanying table:

	1935	1934
Lub oils	$18,598,863.78	$18,354,934.44
Gasoline	122,620,178.44	163,130,816.49
Transportation of oil by pipe line	7,208,385.64	7,743,109.40
Crude petroleum processed, etc.	1,291,761.27	.....
Automobile trucks	4,100,781.73	3,059,428.08
Automobiles and motorcycles	22,252,735.65	19,460,733.68
Parts and accessories	4,674,909.96	3,997,875.40
Tires and inner tubes	19,298,734.32	21,384,443.71
Total (automotive)	$200,046,350.89	$237,131,341.20

New Activity Reported in East Texas Refining

The Texas Oil Products Co. has purchased a 14-car loading rack from R. O. La Neve. It is located in the D. Johnson lease in the L. J. Rigsby Survey, Gregg County. The Texas Oil Products Co. owns and operates a 3,000-bbl. capacity skimming plant in Gladewater.

The L. & G. refinery, a 1,500-bbl. capacity skimming plant at Gladewater, has been sold to Edgar Hays. The plant has also operated under the name of the Goldman Refining Co.

Two large pits are being constructed on the Sam Kay farm near the town of Gladewater, Gregg County, Texas, and two 55,000-bbl. tanks and a refinery are expected to be erected on this site. Heretofore such pits have been built only for the storage of fuel oil, but now they may contain any kind of petroleum product in this field.

Another plant has been added to the list of East Texas refineries. This plant, owned by the Heath Refining Co., formed by A. Heath and R. Beasley, has a daily skimming crude capacity of 2,500 bbls. and is located at Camps Switch on the Texas & Pacific Railroad in Gregg County. Daily crude capacity of the plants in the field is about 220,000 bbls., although with only from 25 to 32 plants operating each week, runs are held to around 31,000 to 45,000 bbls. per day. This week they were nearer the former figure, but have been running much higher than that.

CANADIAN PETROLEUM IMPORTS

OTTAWA, Canada, Apr. 30.—Imports of petroleum, asphalt and their products into Canada in February were appraised at $2,003,802 compared with $2,415,169 in January. Of the February imports, the United States supplied 76.4 per cent; Peru, 20.4; Venezuela, 2.3.

Crude petroleum imports in February totalled 53,576,228 gallons, against 59,948,284 gallons in January. The February imports were: United States, 36,990,818 gallons; Peru, 13,819,521; Venezuela, 2,765,889.

Exports of petroleum and its products from Canada in February were valued at $11,335 compared with $12,294 in January.

Lewis Elected Head of New Sunset Oil Company

Election of James H. Lewis as president of the newly-organized Sunset Oil Co. by directors of the company, was announced today. Mr. Lewis takes office immediately with headquarters in Los Angeles, Calif.

The Sunset Oil Co., a reorganization of the old Sunset Pacific Oil Co., has extensive marketing facilities in southern California, Oregon and Washington, owns 125 producing wells in southern

JAMES H. LEWIS

California, a pipe line from its fields to storage at Torrance and to its marine terminal in San Pedro, and operates a refinery at Signal Hill.

"Jim" Lewis, a veteran in the oil business, was formerly connected with the Associated Oil Co., and also Sanderson and Porter, engineers, handling their oil engineering work and pipe lines in the Mid-Continent Field.

Except to say that plans of the company call for development of its oil production and increase in marketing representation through independent outlets, Mr. Lewis said that any detailed program would have to be announced later. Sunset Oil Co. is an entirely independent company in which no major or other oil company own any stock interest whatever.

HEAT TRANSFER DISCUSSED

The Society of Chemical Industry and co-operating societies will meet on May 10 to hear Prof. Walter G. Whitman of the Massachusetts Institute of Technology deliver a paper on the subject, "Diffusional Processes." This paper will be a discussion of the transfer of material and transfer of heat from one phase to another.

The meeting will be held at the Chemists' Club, 52 East Firty-first Street, New York City, and will start at 7:45 p. m. A dinner will be held at the club beforehand, starting at 6:15.

NEW TEXAS LEGISLATION

The Texas House of Representatives recently passed a bill tightening up the collection of the gasoline tax, providing for a limitation of 30 gallons of gasoline in the tanks of trucks coming into the state. It requires refining companies to pay taxes on gasoline used in their own trucks. It did not change present farm and aviation exemptions.

Pennsylvania Deep Production Probable

(Continued from Page 20)

beds between the Corry and the Olean sandstones vary in thickness between 20 and 200 feet, increasing toward the south, but the Shenango of Erie and Crawford Counties does not appear in the Warren quadrangle section at all. Throughtout a large part of the northwest corner of Pennsylvania, the Meadville limestones that occur in this interval above the Corry sandstone are very useful key beds to the oil geologist tracing structure and their disappearance is to him of added significance.

Figure 3 also illustrates the progressive change in the exposed section that is available to the field geologist, as a result of the regional dip. The thickness of the beds below the unconformity that are available for structure tracing purposes is maximum in the north and in going south the situation reverses. The distribution of these beds is indicated in a very general way on an index map on Figure 3.

While we do not know how closely the surface structure will agree with the subsurface structure in this region, it is obvious that there is more chance for agreement if the surface work is done on beds that occur below the unconformity than there would be if done on beds that occur above the unconformity. That structure below and above the unconformity may vary considerably has been referred to in connection with Figure 4.

The rocks of Pottsville age, the basal series of the Pennsylvanian system, in themselves are not uniform throughout this region. As shown in Figure 4 the Olean conglomerate and Sharon shale, which are the lower members of the series in the north, disappear from the river section between Tidioute and Tionesta. They probably were not deposited farther south where the earliest deposition is recorded by the Connoquenessing sandstone. The Mercer shale and the Homewood sandstone, the upper members of the series, begin to appear in the hills above Allegheny River at Thompson's Station. As indicated on the index map on Figure 3, throughout area 2 pre-Pennsylvania rocks are exposed only in stream valleys, the interstream ridges being capped by Pottsville rocks, and in area 3 the regional dip has carried all of the pre-Pennsylvanian beds below drainage. Throughout area 2, then, the field geologist is dependent to a large extent upon Pottsville beds in mapping surface structure. This series consists chiefly of massive sandstones with interbedded shales that locally include discontinuous coal beds and is not an eminently satisfactory surface formation on which to map structure. Moreover, as has been pointed out, the structure of the Pottsville and younger beds may not be as closely in agreement with subsurface structure as is the structure of the pre-Pottsville rocks. Area 2, then, from the standpoint of the stratified rocks that appear above drainage, is a less favorable area for surface geology than in area 1. Some degree of exception must be made, however, when the factor of glacial cover is considered. The south limit of glaciation is indicated on the index map of Figure 3 as extending roughly southwest through Warren and Venango Counties. In southern Erie, Chawford and northern Mercer, and northwest Warren Counties the glacial cover is heavy and is a decided handicap in that it conceals much of the bedrock of the plateau surface and of the valley bottom and lower valley slopes. In southeastern Venango and in Forest Counties conditions are improved somewhat by the absence of glacial cover.

Most of area 3 has been studied geologically in detail. The surface rocks here are the Allegheny and younger coal-bearing series.

Structure

The status of structural mapping in northwestern Pennsylvania is shown in Figure 2. Five classes of structural information are represented in this illustration. Contours in the Bradford district are shown on the top of the Bradford Third sand and are based upon very detailed subsurface work by Fettke. Contours in Venango County are after Carll, Volume 13, Plate 8, published in 1878. Carll, who had relatively little subsurface data at his disposal, drew these contours on the Venango Third sand but the datum has been converted to top of Corry by using a factor of +480 feet. The remaining structure lines are shown on outcropping beds. Of the eight quadrangles shown at the south edge of the map, the New Castle quadrangle was contoured on the Middle Kittanning coal, the remainder were contoured on the Vanport limestone; all have been converted to a horizon —50 feet below the Vanport which corresponds (within 25± feet) to top of Pottsville in this region. Contours in the Warren quadrangle are after detailed mapping by Butts. Originally drawn on the top of the Salamanca they have been converted to top of Corry by using the factor +300 feet. The remaining contours in the northwest area, and the structural axes on the east edge, are based upon reconnaissance surveys by Cathcart. The axes in the eastern area were determined by strike and dip methods and represent the western edge of a large area mapped in this manner. In an effort to connect with the areas of detailed mapping in the Bradford district and in Clearfield and Jefferson Counties the strike and dip method was, admittedly, extended west beyond its area of greatest usefulness and the results should therefore be valued accordingly.

The reconnaissance survey of Erie, Crawford and Western Warren Counties represents a trial effort. It serves to indicate that at least minor structures, such as anticlinal noses and terraces, are present in the area but the results are not sufficiently dependable to serve the purpose of directing exploratory drilling. In presenting these structure lines the method used in mapping and the conditions that confront the geologist working in this area should be stated. The country is heavily glaciated; slopes are smooth

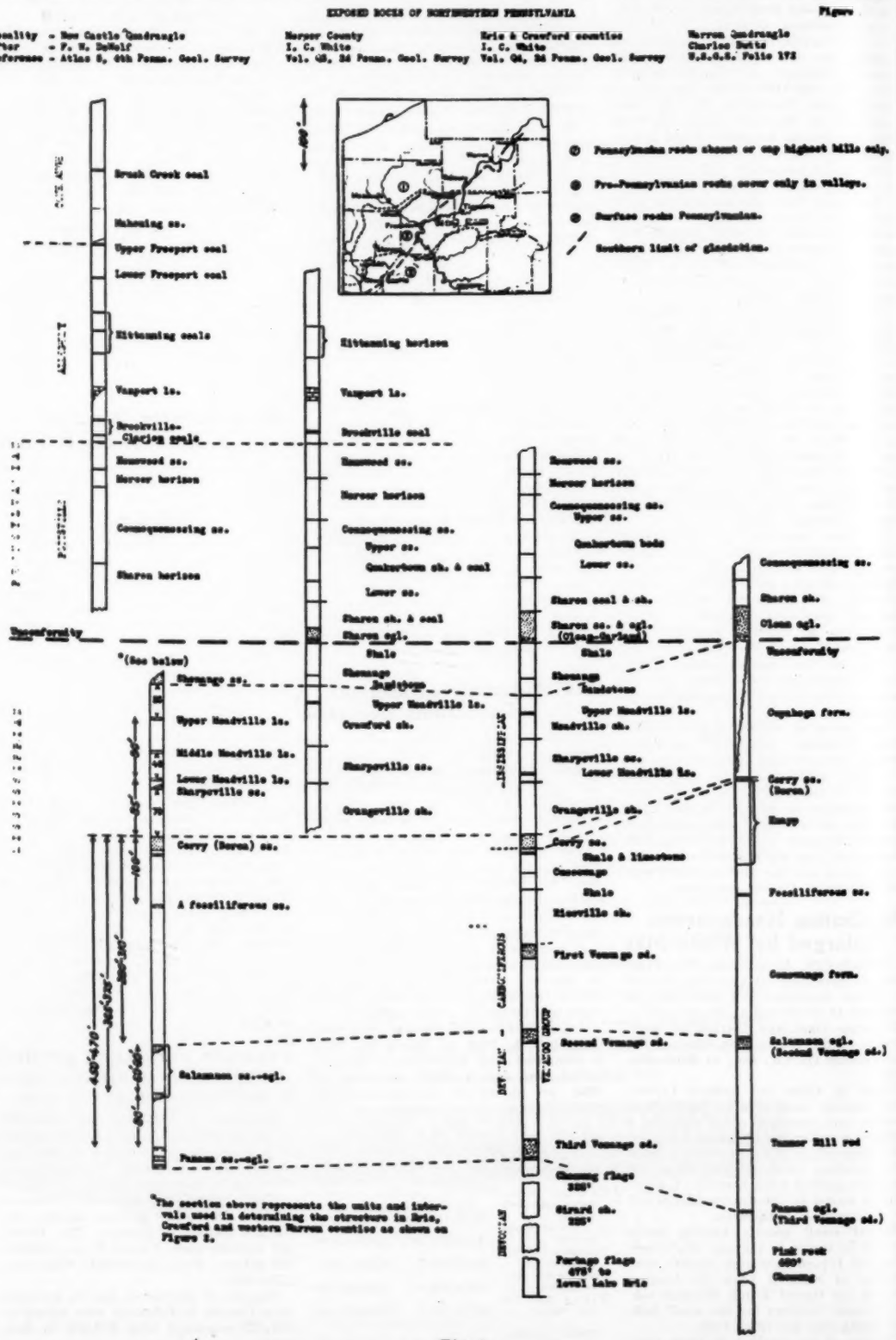

Fig. 3

and gentle; except along the principal streams relief is moderate to slight. Bedrock is exposed in something like 1 per cent of the area, usable exposures commonly occurring only on entrenched tributary streams and only throughout that part of the stream course that has the maximum grade. Throughout the stream's course on the upland, and to well below the upland level bedrock is concealed by glacial debris; in its lower course bedrock is concealed by glacial fill that forms the bottom and extends well up the sides of the principal valleys.

The "key" rocks are principally sandstones and conglomerates that commonly possess neither distinctive nor constant lithologic characteristics. Measurable sections seldom exceed 100 to 150 feet due to interference of glacial debris. The prevailing exposure is of the cut bank type that prohibits the use of any refinement of the strike and dip method that might be applicable to flat-lying beds. Topographic base maps are available for all of this area and provide bench marks from which elevations for structure use were determined by aneroid barometer.

Reconnaissance Mapping

A columnar section included in Figure 3 shows the stratigraphic units that proved of most use in reconnaissance mapping and the interval between horizons. The lowest horizon used is the Panama conglomerate which is correlated with the Venango Third oil sand. Its approximate line of outcrop in Crawford and Erie Counties is shown on Figure 2; actually it is not well exposed except in a few stream channels and in quarries where it was once raised for building stone. West of Wattsburg the Panama consists of three sandstones, each 5 to 10 feet thick separated by 5 to 10 feet of shale and thin-bedded sandstone. The middle sandstone, the quarry rock, commonly is the thickest member and locally includes a massive bed up to 3 feet thick that is very fine and uniform in texture. The odor of petroleum is quite distinct at some of the now long-abandoned quarry faces. Just west of Wattsburg this middle member begins to show pebbles, and south of Wattsburg the rock is a massive conglomerate 15 feet or more thick.

The Salamanca sandstone is most useful in the Youngsville-Tidioute area, where it consists of two massive sandstones, either of which locally is conglomeratic. The horizon was traced westward to near Union City where it seemed to lose its massive character and to be represented by a succession of flaggy sandstones that do not lend themselves to reconnaissance use.

The Corry sandstone is lithologically the most distinctive rock in the region. Its type locality is the old quarry at the top of the hill south of Corry. The texture of this rock is fine and remarkably uniform. Its color is very light gray and its weathered surface is chalky white. At the type locality about 2 feet of a massive bed is exposed but regionally the sandstone is thin-bedded to platy rather than massive. In thin beds it has the color and texture of the massive rock at Corry and is distinguishable from most other thin-bedded sandstones of the region by being hard and brittle. Where it does not outcrop its presence may be indicated by platy, smooth weathering, chalky white float. Springs commonly occur at its base. In the vicinity of Corry the sandstone is about 20 feet thick, to the east it thins rapidly and in the Youngsville area consists of only a few feet of hard thin-bedded sandstone. The lithologic character persists, however, and the rock is everywhere fossiliferous. The Corry is readily traced throughout the Linesville quadrangle where it consists of thin-bedded, hard sandstone of fairly typical lithology and is about 10 feet thick. An aid in the identification of the Corry sandstone in the Linesville and Cambridge Springs areas is the Cussewago limestone which occurs about 20 feet below the top of the Corry.

The most useful rocks in the section just above the Corry sandstone are the Meadville limestones. Commonly an upper and a lower limestone are present but in the area south of Meadville a middle member also is recognized. These limestones are extremely hard, dark blue rocks that show glistening crystal faces of calcite on a freshly broken surface. They are very siliceous, chip with difficulty and break with a conchoidal fracture. Physically they are much alike and very much like the Cussewago limestone. The thickness varies from 6 inches to 2 feet; single beds commonly are not more than 10 inches thick. The rocks weather in smooth-rounded forms and the float being relatively indestructible is readily recognized and traced to its source. Commonly the limestone is confined to a restricted horizon but locally several beds separated by sandstone or shale occur throughout a horizon 10 feet or more thick.

The combination of factors, few and isolated usable outcrops, indefinite lithology, gentle dip, and measurement of elevations by barometric method yielded results that are presentable only on the very reconnaissance scale and contour interval used here. The results indicate a probable structural nose or plunging anticline in the vicinity of Meadville and another north of Garland; plunging synclines are indicated north of Moisertown, east of Meadville, at Columbus north of Pittsfield and at Tidioute, and terracing as shown by widely spaced contours is suggested at a number of localities. The U. S. Geological Survey had previously mapped a small dome southwest of Warren.

The Unexposed Rocks

Anticipating the future need of detailed subsurface information, especially with respect to the deeper horizons, the Pennsylvania Geological Survey in 1925 engaged C. R. Fettke to study samples of drill cuttings from deep wells as such samples became available, so that in time a considerable fund of information would be assembled on the subsurface stratigraphy of the oil and gas region of the State. The value of such information to the producer increases as depth of drilling and incident cost increases. It helps to insure thorough, economical and intelligent exploration. The work has been in progress since 1925, to the extent that funds have been available to carry it on. The data presented here are from a report[1] of progress submitted to the Geological Survey in 1935. The work is not completed. As drilling continues, the information can be extended and some of the deductions made may have to be changed considerably.

When the work was first undertaken, it was not customary for operators to take complete sets of drill cutting samples, that is, samples from all the strata penetrated by the drill. In the case of the earlier deep wells, therefore, the opportunity of obtaining much valuable geological information was lost. In recent years, however, practically all the major companies and many of the individual operators as well, have made it a practice to save complete sets of samples from all wildcat wells drilled to test the deeper horizons. Through the courtesy of the companies and individuals concerned, samples from a considerable number of these wells have been made available for examination.

Thus far, cores have not been taken of the sands occurring at any of the deeper horizons. Only cuttings and occasional fragments have been available for examination. Cores of these sands would be highly desirable so that their porosity, permeability, degree of cementation and metamorphism, etc. could be determined for purposes of evaluating their potential possibilities as reservoir rocks for gas or oil.

In the laboratory, each sample is first spread out on a large watch glass and examined with a lens of 2½ × magnification. Then a small portion is placed on a 2-inch watch glass, and thoroughly washed with water to free the particles from adhering clay and other fine material. The particles are then examined under water with a pocket lens of 12 × magnification and tested with dilute hydrochloric acid for the presence of carbonates. It was found that the different types of rock particles can be more readily distinguished under water than in the dry state. All limestones are treated with dilute hydrochloric acid, and a qualitative test is made on them to determine the relative content of magnesium carbonate. The insoluble residues are examined under a binocular microscope.

Subsurface correlations have had to be based largely upon lithologic characteristics and stratigraphic sequence. Microscopic fossils which the drill cuttings may contain are, as a rule, not identifiable because the fragments are too small. Although microscopic fossils are occasionally observed in the samples that have come to the writer's attention, they are not conspicuous.

The degree of refinement, therefore, that can be attained in sub-surface correlations in the Appalachian plateau province is dependent in large measure upon the amount of information that is available in regard to the formations involved along their outcrops around the margins of the area with respect to such features as lithologic characteristics and thicknesses, lateral changes in these, stratigraphic sequence, fossil faunas, and proper correlations. There are still several outstanding problems involving correlations along outcrops of the strata represented in the subsurface sections of northwestern Pennsylvania that have not as yet been definitely solved.

(To be continued)

[1] Fettke, C. R.: Subsurface stratigraphy of Northwestern Pennsylvania and a resume of gas and oil possibilities of deeper sands. Penna. Geol. Survey, Bull. 114, March, 1935.

WALTER E. PAUL DIES

Walter E. Paul, a Washington official during the Taft and Wilson administrations died suddenly at his home in Oklahoma City, April 24. He was an accountancy expert in Tulsa until 1930, when he was sent to Oklahoma City to supervise settlement of the properties left by the late T. B. Slick, who died that year.

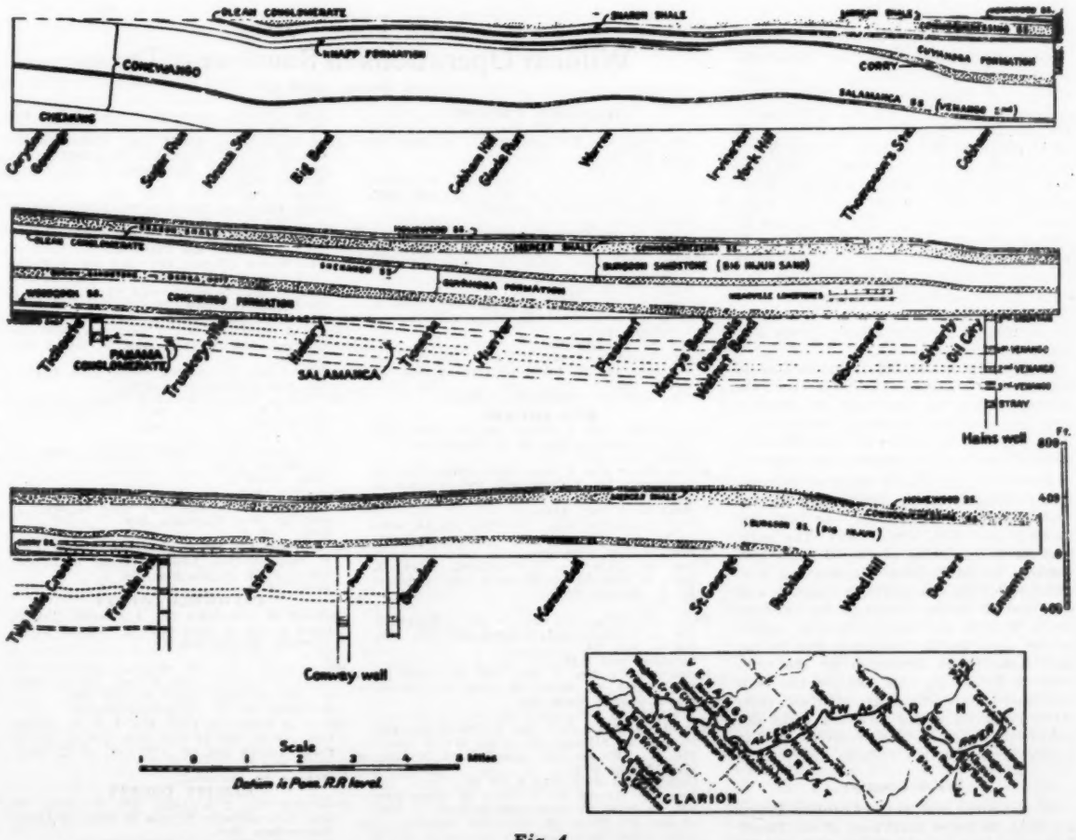

Fig. 4

Section along Allegheny River from the New York State line to Emlenton showing the unconformity between the Pennsylvanian and Mississippian series of the carboniferous system. After Charles Butts and K. E. Caster. Originally published in Topographic and Geologic Survey Commission of Pennsylvania, Report for 1906-08. Correction, after Caster, applies to the section from Tidioute to Oil City as published in Bulletins of American Paleontology, vol. 21, No. 71, 1934.

New Field Discovered in San Patricio County; Hidalgo Wildcat Deepest Producer in County

SAN ANTONIO, Tex., Apr. 29.—The discovery of a new field, 10 miles east of Sinton in San Patricio County, the recompletion of Union Sulphur Co.'s deep wildcat test in Hidalgo County as the deepest producer in the district, and the possibility of production being developed in a deep test in the Carolina-Texas gas field, Webb County, marked another interesting week of developments for the Southwest Texas district.

Plymouth Oil Co.'s No. 1-C Welder, a wildcat in San Patricio County, which indicated production possibilities two weeks ago due to a favorable drill stem test, was completed for an initial production of 11 bbls. per hour flowing through a three-eighths inch choke, with tubing pressure 165 pounds and casing pressure 420 pounds. The oil is reported to be 35 gravity and the well is producing from a good body of sand cored from 5,501-03 feet and 5,506-08 feet, total depth. Seven and five-eighths inch casing was cemented at 5,409 feet.

The test is on a block of 10,000 acres out of the Welder ranch and is approximately 12 miles northeast of the Sinton Field, discovered more than a year ago by the company. The new field has the appearance of making a much better field than the Sinton Field, as a large majority of the wells completed there have made considerable gas and distillate. The company is laying a line from the well to its loading rack at the town of Sinton and will ship its own oil. No new locations have been announced, but the field is expected to get an early development program. Southwest of Sinton in the C. C. Hornsby Survey, Masterson and others' have abandoned No. 1 Wurzbach at a total depth of 5,512 feet.

Hidalgo Discovery

One of the most important discoveries in the district was assured by the completion of Union Sulphur Co.'s No. 3 American-Rio Grande Land & Irrigation Co., a wildcat 8 miles north of the town of Mercedes in the eastern part of Hidalgo County. After the operators had reset new screen which collapsed two weeks ago due to high gas pressure that registered 2,500 pounds on the casing and 2,250 pounds on the tubing, the well was brought in the latter part of the week flowing 10 bbls. of 57 gravity pipe line oil per hour through a one-quarter inch choke, with tubing pressure 650 pounds. There was no gauge available on the casing pressure.

Production is coming from 16 feet of Frio sand bottomed at 7,493 feet, the deepest producing depth in the district, and its completion marks a new type of field for this part of the country. It opens possibilities for the surrounding counties.

The test is on a solid block of approximately 35,000 acres, held solely by the Union Sulphur Co. which has been exploring the block since 1933. The original block consisting of 20,000 acres was worked by McCollum Exploration Co., using reflection seismograph shooting and was turned to the company for development. This is the third deep test drilled in the area by the company and is the first lease to be developed by the company in Texas. No new location has been announced, but company officials indicated the area would have an early development program. The discovery well is in Block 86, North Capisallo district.

Webb County

On the south end of the Carolina-Texas gas field, 10 miles northwest of the Bruni Townsite area of the West Cole Field, Webb County, Carolina-Texas Oil & Gas Co.'s No. 11 Benavides in Block 12, Survey 683, has indicated deeper production possibilities by coring sand showing oil and gas from 4,974-93 feet and is waiting on cement to set after 7-inch casing had been cemented at 4,974 feet preparatory to testing.

This is an old test being drilled deeper. It was drilled the past year to 3,343 feet when it was left standing. Drilling was resumed at 3,343 feet in February, and it picked up its first showing, in broken sandy shale and lignite from 4,932-74 feet, thought to be the top of the sand. It is the opinion of many that the sand is the Mount Selman formation, and if it makes a commercial well it will be the first important oil production from this formation. The only other Mount Selman production is found in the Lopeno gas field in southern Zapata County. The outcome of this test is most important as it will open enlarged developments in the field and entire district. The field is one of the oldest gas areas in the district, and was discovered by Carolina-Texas Oil & Gas Co. in 1921, at a depth of 1,270 feet.

Frio County

The completion of Amerada Petroleum Co.'s No. 1 Davies and McKennon, in the Pearsall area, Frio County, for an initial production of 28 bbls. per hour on gas jet, with approximately 300 pounds tubing pressure and 900 pounds casing pressure through a fifteen-sixty-fourths inch choke, has definitely established this new field which was first proven productive several months ago as one of major importance, and its completion is creating an extensive new play. It is approximately 3,100 feet southwest of the company's two producers, one producing around 150 bbls. per day and the other a very small well. Production is coming from the Navarro formation bottomed at 3,921 feet. Several large blocks have been assembled, and this district is expected to be the scene of much wildcat development.

Live Oak County

Lion Oil & Refining Co.'s No. 1 P. E. McNeil, the discovery of the McNeil Field in Live Oak County, was deepened from 4,376 feet to 4,388 feet, and was completed for an initial production of 15 bbls. per hour through a fifteen-sixty-fourths inch choke, with casing pressure 300 pounds and tubing pressure 900 pounds. It had been producing around 90 bbls. of oil daily since completion, and was drilled deeper to the approximate depth from which its No. 4 McNeil was completed two weeks ago as a large well. It is reported Holland Oil Co. has made tentative location for three tests to be drilled on its 30,000-acre block, west and southwest of the town of George West. Several major companies are reported to have purchased spreads around the proposed tests which will be drilled to the Cook Mountain formation if necessary.

West Tuleta Field

William F. Morgan and others' No. 1 C. W. Bassinger extended the producing limits of the West Tuleta Field a short distance northwest, when it was brought in and started cleaning itself flowing 12 bbls. per hour through a one-half inch choke, with tubing pressure 40 pounds and casing pressure 250 pounds closed in. It cored sand showing oil from 3,849-52 feet and 5⅞-inch casing was cemented at 3,849 feet. Another short south extension has apparently been made by the showing of Inter-Allied Oil Co.'s No. 1 Nick in Section 20. On a 10-minute drill stem test from 3,967-91 feet it tested 30 feet of oil and 400 pounds of working pressure in 10 minutes and the operators are cementing casing preparatory to testing.

In the southern part of the county, the wildcat of Felmont Corp., No. 1 Ernest, topped sand showing gas at 4,728 feet and on a three-minute drill stem test from 4,728-32 feet it made a very slight blow of gas and recovered 2 thribbles of mud through a one-quarter inch choke on bottom and a five-sixteenths inch choke on top. One mile and a half north of the old Grayburg area, north of Mineral in the Hadley Survey, Worth Oil Co. is preparing to test No. 1-A Rutledge at a total depth of 3,394 feet. Sand was cored showing oil from 3,389-94 feet and casing was cemented at 3,389 feet.

Duval County

Henderson and Harvey is plugging back No. 1 Chernosky, a wildcat in Survey 226, 5 miles east of the Eagle Hill Field, Duval County. It was drilled to 2,650 feet and is plugging back to 2,220 feet, where it made a favorable showing of oil and gas on a drill stem test from 2,210-24 feet several weeks ago.

Wildcat Operations in Southwest Texas

Week Ending April 27

BANDERA COUNTY

W. B. Kyle et al's No. 1 Duke, 200 ft. NW line, 150 ft. SW line of J. A. Bennett Sur. No. 7.
Abd. location.

Plateau Oil Co.'s No. 1 Garrison, G.C.&S.F. Sur. No. 506, 1,500 ft. from W and 2,970 ft. from N lines of survey.
Drlg. 3,166 ft.

BASTROP COUNTY

Hiram Edwards' No. 1 Murchison, 11,200 ft. from NW line, 4,200 ft. from SE line, Addison Litton Sur.
2,715 ft.; no report.

Malone & Owens' No. 1 Spooner, 500 ft. from N line, 3,550 ft. from SW line of Leverenz Sur.
605 ft.; no report.

Marts & Beavens' No. 1 Miller, 235 ft. from NE line, 414 ft. from SE line of Blk. 22, Dykes Sur.
T.D. 3,000 ft.; pulled in derrick.

BEE COUNTY

Dirks Bros.' No. 1 Goree, 330 ft. from NW cor. of Turman Sur. in J. Taylor Sur.
Drlg. 2,790 ft.

Dirks Bros.' No. 1 Geo. Ray, 2,000 ft. S of Jamison's No. 1 Campbell, 990 ft. from N line, 150 ft. from W line of 80-ac. tract, Blanchard Sur. 133.
T.D. 3,933 ft.; I.P. 114 bbls. in 14 hrs.; 15/32-in. choke; 200 lbs. tubing pressure; 400 lbs. csg. pressure.

Firm Oil Co.'s No. 1 Copeland, 1,650 ft. from N line, 330 ft. from E line of lease, B. O. Hadley Sur.
Spudded.

Haines-McMillan Oil Corp.'s No. 1 Stoltzfus, 150 ft. from N and E lines of NE¼ N¼ NW¼ Sec. 14.
Spudded and S.D.

Hartzendorf's No. 1 fee, 990 ft. from N line, 4,290 ft. from W line of 200-ac. tract, George Kerr Sur.
Waiting on D.S., 3,648 ft.

Humble O. & R. Co.'s No. 2 Thompson, 466 ft. SW of SE cor. of J. C. Wood tract, 466 ft. SW on line parallel to E line, Wm. Burke Sur.
Cutting out drill pipe 5,405 ft.

Francis P. Hynes' No. 1 Theo. M. Plummer, 330 ft. from W line, 990 ft. from S line of Sec. 33, Theo. M. Plummer Subd.
Drlg. 1,000 ft.

Philmont Corp.'s No. 1 T. J. Ernest, 466 ft. from SE cor. of J. C. Madray 216-ac., thence 460 ft. NW along survey line, thence S of R/A 466 ft., Bee County School Sur.
T.D. 4,732 ft.; preparing to make D.S. test on sand 4,729-32 ft.

Paul L. Meaders' No. 1 Emil Keller, in NE cor. of Keller tract, 330 ft. from N line, 330 ft. from E line, Sec. 28, of the M. Alcorte Sur.
Drlg. 3,400 ft.

Worth Oil Co.'s No. 1-A Rutledge, 100 ft. S of No. 1, A. Hadley Sur.
Sand 3,389 ft.; ready to bring in.

BEXAR COUNTY

Byron Rife's (Dorine Oil Co.) No. 1 Tudyk (315 acres), 500 ft. W, 350 ft. N of NW cor. of Sidney Heywood's 61-ac. tract, F. Cardinas Sur., Blk. 25.
Abd.; dry, 1,955 ft.

Jones & Kieffer's No. 1 LaGrane, NW cor. of tract, 210 ft. each way, F. Rolen Sur. No. 48.
T.D. 1,010 ft.; bailed some 38.3 gravity oil; now fishing for bailer.

McPhee & Briggs' No. 1 F. Lamb, 9,200 ft. from S line, 800 ft. from W line of Sur. No. 3 (Manuel de Luna).
Drlg. 1,745 ft.

Geo. O'Neil's No. 1 Holly Crouch, NW cor. of 150-ac. tract.
Drlg. 1,425 ft.

Carroll C. Raborn's No. 1 Claude McCauley, 150 ft. from N and NW lines of tract in Sec. 52, Wm. Harrison Sur.
Drlg. 165 ft.

C. C. Raborn's No. 1 A. B. Stephens, 1,630 ft. from N line, 1,540 ft. from W line of tract, P. B. Hayes Sur. No. 3.
Drlg. 50 ft.

CALDWELL COUNTY

Coffield & Lanning's No. 1 Franks, 150 ft. from N and E lines of S ½ of 131.6 acres, Edward Brown Sur.
Drlg. 3,100 ft.

Exploration Co.'s (F. Meyers) No. 1 W. T. Mooney, 810 ft. from S line, 450 ft. from W line of 95-ac. tract, S. Seal Sur.
Standing 290 ft. (corrected depth).

Ogden & Reed Oil Co.'s No. 1 J. A. Compton, 450 ft. NE of NW line, 150 ft. SE at right angles out of NW cor. of P. Martinez Sur.
Moving in material.

DEWITT COUNTY

Stewart's No. 1 Kleberg, 680 ft. from W line and midway N and S lines of tract, Tommelson Sur.
Drlg. 210 ft.

Sunray Oil Co.'s (S. S. Price et al) No. 1 Beuhrig, 330 ft. from N and E lines of Sec. 7, T.&N.O. Sur.

(Continued on Page 46)

ROCKY MOUNTAIN RUNS

Estimated daily average crude oil production for the week ending April 27 follows:

WYOMING	
Salt Creek	17,470
Big Muddy	1,650
Badger Basin	30
Black Mountain	220
Byron	1,340
Dallas Derby	640
Dutton Creek	50
Elk Basin	40
Ferris	20
Frannie	110
Garland	1,410
Grass Creek	Shut in
Hamilton Dome	1,190
Hudson	290
LeBarge	1,310
Lance Creek	1,100
Lost Soldier	1,220
Mule Creek	Shut in
Midway	70
Notches	Shut in
Oregon Basin	2,020
Osage	740
Pilot Butte	30
Rex Lake	Shut in
Rock River	1,520
South Casper	Shut in
Poison Spider	70
Teapot	20
Waugh Dome	540
Total Wyoming	33,100
MONTANA	
Buckley-Border	270
Cat Creek	760
Cut Bank	4,700
Kevin-Sunburst	3,700
Lake Basin	50
Pondera	990
Total Montana	10,470
COLORADO	
Florence	160
Fort Collins and Wellington	430
Iles Dome	3,670
Moffat	370
Orchard	80
Rangely	80
Tow Creek	180
Total Colorado	4,970
NEW MEXICO	
Artesia	690
Cooper area	5,020
Eunice	6,640
Hobbs	30,210
Hogback	200
Hospah	Shut in
Jal	3,420
Lea	1,370
Maljamar	1,930
Rattlesnake	710
Table Mesa	90
Total New Mexico	50,280
Total Rocky Mountain Region	89,390

Three Semiwildcats Staked in West Texas Area; Fifty-Four Tests or Locations in Ward County

By L. E. BREDBERG
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Apr. 29.—Thirteen locations and 14 completions were reported in the West Texas district during the week. Three semiwildcat locations were staked, one in Crane, one in McCulloch and one in Upton County. The test in Crane is in an area just recently extended in the extreme north part of the county. Gulf Production Co. made this location, on the Henderson ranch, in Section 3, Block B-23, about 1 mile northwest of Gulf's recently completed No. 9 Waddell, and in the direction of Wahlenmaier's recently completed small producer to the northeast. This new test will link the Wahlenmaier well with the Waddell Pool to the south. Drilling and completing of two small wells farther east, one by Gulf Production Co. and one by Wahlenmaier Petroleum Corp., gave possibilities to the area. Magnolia Petroleum Co. is also drilling a test in the extended Waddell Pool. This test is just north of No. 9 Waddell, and in Section 2, Block B-23. Other tests are to be drilled on these and adjacent sections.

Winkler County

Two important locations were staked on the Howe-Halley sandy lime trend flanking the Hendricks Field, Winkler County, on the east, one by Wahlenmaier Petroleum Corp. in Section 26, Block 26, P.S.L. Survey, 3 miles south of the Howe area, and Emperor Oil Co.'s No. 1 Halley, Section 12, Block B-12, P.S.L. Survey, 2¾ miles north of the Halley Pool.

Four wells were completed in the Howe Pool this week, three by Sayre Oil Co., which opened the new sandy lime pool in Section 12, Block 26, several months ago, and one by Magnolia, the best yet completed in the new pool. It made an initial of 1,498 bbls. per day from total depth of 2,964 feet. Pay was topped at 2,818 feet. It extended the pool a short distance east.

Humble Oil & Refining Co. has made a tentative location in Section 24, Block B-5, P.S.L. Survey, about 2½ miles southeast of the wildcat producer on the Brown and Altman ranch in Section 6, Block B-5, south of Kermit. This location is east of the sandy lime trend and between the Brown and Altman producer and the Emperor Oil Co.'s location. These locations will prove a field 15 miles in length, or a series of pools flanking the Hendricks Field. This sandy lime trend may prove the second major field in the county, and may outstrip the Hendricks Field in importance. There are now 21 wells drilling or preparing to drill in the county, most of which are in the Howe and Halley areas or on this trend between the pools.

Ward County

There are 54 active tests or locations on which tests are to be drilled immediately in Ward County. Simms Oil Co.'s No. 2 Johnson, south corner of Section 28, Block 34, H.&T.C. Survey, may extend the southeast Ward area north and west. Alexander's No. 1 Richter in the north quarter of Section 27, same block and survey, is important. West Texas Oil & Royalty Co.'s test in Section 6, Block 16, University Lands, is 2 miles south of the nearest producer, owned by the company, and has a chance to extend production. Rogers and Graham's No. 1 Costly, Section 2 of the James Howe Survey, is another interesting outpost.

A lime test will probably be drilled in the SW half Section 19, Block 34, H.&T.C. Survey, in the Eppenauer sand sector. If it proves a producer from the deeper pay it will extend production and open a second pay zone.

Jerry Sines' No. 1 Brown, in Section 13, Block 5, H.&T.C. Survey, southwest of the Hayzlett area, is an important outpost on the extreme south end of this area near Grand Falls.

Magnolia Petroleum Co.'s No. 2 Sealy, in the W half Section 43, Block F, is 3 miles west of the south end of the O'Brien Pool, on a large block held by the company. It may extend the O'Brien Field, proving part of the Magnolia block to production.

Two wells were completed in south Ward County this week but several locations were staked.

Westbrook and Caton have increased production in their wells in the Bennett area, southeastern Ward County, and others are expected to shoot their wells also. The two operators completed No. 6 Bennett for an initial production of 1,322 bbls. per day after shooting with 110 quarts from 2,332-2,559 feet. Pay was topped at 2,342 feet and total depth is 2,559 feet.

Howard County

International Petroleum Corp. of Fort Worth purchased Dorn and others' well and 480-acre lease in Section 45, Block 30, Township 1n, T.&P. Survey, Howard County. This well was a mile northwest extension to the Dodge-Denman area, and is incomplete although it made 54½ bbls. on a two-hour proration test this week. Top of pay is 2,585 feet and total depth 2,791 feet.

H. P. Slagel, trustee's No. 1 Foster, in Section 43, Block 39, 1 mile northeast of the Dodge-Denman Pool, eastern Howard County, is apparently a limiting test in that direction. It drilled to 3,013 feet and struck water from 3,010-13 feet which caused the hole to be plugged back to 2,760 feet for shooting. It showed oil from 2,694-2,740 feet with increases logged from 2,801-20 feet and from 2,-862-75 feet and from 2,964-70 feet. It will make some kind of a well after shooting, but defines the pool on the northeast.

White and Baker Area

The shallow area recently opened on the White and Baker ranch, about 9 miles west of the Yates Field, Pecos County, appears more discouraging. Gulf Production Co. drilled to 2,151 feet and had 1,000 feet of oil in the hole. It had a showing of oil from 1,985-88 feet and from 2,045-47 feet, estimated 6½ bbls. in 12 hours. This test is 2 miles west of the discovery well producing from around 1,820 feet. Two tests drilled south and southeast proved dry and one drilled by Gulf about 1¼ miles to the east also proved dry. Another test will probably be drilled northeast, in a direction yet untested.

Deep Test

John I. Moore and Loffland Brothers and others are preparing to deepen No. 1 L. S. McDowell, in Section 22, Block 34, Township 2s, T.&P. Survey, Glasscock County. It is shut down at 9,946 feet. The unit holders have decided to drill another 10 days. Showings may be shot around 9,520 feet.

Jones County

There were three abandonments in northern Jones County where an effort is being made to pick up the Condor-Sayles pay, or the pay found in the Byram-Jones well. The abandoned wells will be found on the accompanying completion report.

Blocking in Nolan County

Captain Clark and others have blocked around 10,000 acres 9 miles northwest of the town of Blackwell in Nolan County, and proposes drilling a wildcat. J. H. Johnson of Sweetwater is also planning to drill a wildcat in this county. He has approximately 7,000 acres under lease 10 miles east of Blackwell.

H. Lee of Wichita Falls has purchased 800 acres centering in Section 89, Block 1, H.&T.C. Survey, Fisher County, for two 3,200-foot tests. This acreage is 1½ miles west of the Fisher County lime production.

W. R. Widener of Abilene has leased a 1,500-acre block centering in Section 205, B.B.B.&C. Survey, and is to start a 2,000-foot cable tool test within 60 days.

A small purchase was made in Pecos County this week by Kirk and Whiteside. C. S. Messenger sold his lease in the NW half of the E quarter of Section 54, Block 10, H.&G.N. Survey, including one well, south of the Pecos Valley Pool.

Kimble County

Wilcox Oil Co., of Tulsa, has purchased 8,500 acres in a block centering in Section 7, T.C.R.R. Survey, and is to drill a 5,000-foot cable tool Ordovician test in a few months. The company has had acreage in this area, this block increasing its holdings considerably. Several previous tests in the county have had good showings of oil and gas.

WICHITA FALLS AND RANGER

There were 37 completions in the Wichita Falls district. Western Shackelford and Cooke Counties remain the most active areas. Root and Rhodes of Breckenridge have purchased 600 acres in Sections 1, 2 and 11, in Block 12, T.&P. Survey, and are to drill a wildcat. Other acreage is being blocked or leased on the western side of the county each week, and more tests are to be drilled along this border.

A new shallow wildcat pool has been opened in Cooke County by F. W. Merrick on the A. Knabe farm, in Lot 6, Ivy Survey, between shallow production in Block 17, and Magnolia Petroleum Co.'s shallow gas wells one-half mile northeast. The oil pay in the Merrick well was logged from 720-35 feet and the lime pay from 740-45 feet. Total depth is 821 feet. It pumped 165 bbls. in 24 hours, a good well considering the shallow depth.

Russells' No. 1 N. Piott, 3 miles southeast of production in this area, logged oil sand from 707-17 feet and was bottomed at 722 feet, pumping 108 bbls. per day for three days. These two producers fall within the second drilling campaign along this lime high extension from the Buelcher Pool to 15 miles southeast. It has developed several shallow new pools from sand and lime pay zones.

Magnolia Petroleum Co. has deepened No. 53 Allen, in Section 1, H.&G.N. Survey, north of Electra, Wichita County, and made it a 110-bbl. flowing well with 200,000 feet of gas. This well has produced from a shallower pay logged from 999-1,020 feet since September, 1913. It was deepened to 1,495 feet, picking up a new sand from 1,491-95 feet. The first pay, from the shallow sand, made only a 25-bbl. well, consequently deepening of other wells will probably be started.

Three miles northwest of Iowa Park, in Wichita County, Humble Oil & Refining Co. has leased 1,280 acres in the H.&G.N. Survey on the Mrs. H. Parker lands. A 2,000-foot test will be drilled.

Parties from Oklahoma are leasing on the Preston anticline trend bordering on Red River in Grayson County. A 5,000 foot test is to be drilled on a block centering in the T. B. Allen Survey No. 25. Gardner and Wood and others have 4,800 acres under lease for this test. Only two small oil wells and five gassers have been drilled in the 850-900-foot sand 2 miles north of Pottsboro, in the county. Shooting crews have been working north and northwest across the Red River into Oklahoma in the Preston Bend area.

W. C. Feazell of Monroe, La., has leased 4,000 acres centering in Block 25, San Augustine University Survey, Coleman County, and is to drill a 4,000-foot test. This block is 1 mile south of Centennial Oil & Gas Co.'s seven oil and gas

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Wildcat Operations in West Texas

Week Ending April 26

ANDREWS COUNTY

Fuhrman Pet. Corp.'s No. 2 Ford, 440 ft. from S and 1,320 ft. from E, Sec. 16, Blk. A-43.
S.D. 149 ft.

Honolulu & Llano Oil Co.'s No. 1-B Parker, 440 ft. from N and 1,650 ft. from E, Sec. 11, Blk. A-42.
Elev. 3,281 ft.; drlg. 1,590 ft.

Humble Oil & Ref. Co.'s No. 4 Means, 654 ft. from S and 1,997 ft. from W, Sec. 4, Blk. C-45.
Elev. 3,185 ft.; drlg. 3,050 ft.; big gas 2,910 ft.

Republic Prod. Co.'s No. 1 Boner-State, 2,200 ft. from S and 1,320 ft. from E, Sec. 25, Blk. A-43.
Location.

J. W. Tripplehorn's No. 1 Ogden, 330 ft. from S and 2,310 ft. from W lines of Sec. 6, Blk. A-46, P.S.L. Sur.
Elev. 3,211 ft.; cellar and pi.s.

Wahlenmaier et al's No. 1 Odessa Ranch Co., 1,320 ft. from N and E of Sec. 10, Blk. A-32, P.S.L. Sur.
S.D. 1,225 ft.

Wahlenmaier et al's No. 1 Cox Estate, 1,320 ft. from N and W of Sec. 8, Blk. A-33.
Location.

BREWSTER COUNTY

F. C. Dodson's No. 1 Texas American Syndicate, 660 ft. from N and E, Sec. 66, Blk. 10, G.H.&S.A. Sur.
S.D. 950 ft.

Joiner et al's No. 1 McIntyre, 353 ft. from S, 2,390 ft. from E of Sec. 21, Blk. 352, W. M. Mitchell Sur.
S.D. 2,150 ft.

King & Franklin's No. 1 Gage Est., C Sec. 136, Blk. 22, G.H.&S.A. Sur.
S.D. 800 ft.

G. H. Storey's No. 1 Wilson, 1,980 ft. from N and E lines of Sec. 3, Blk. 212, T.&St.L. Sur.
Drlg. 580 ft.; show gas 490 ft.

S. G. Smith's No. 1 Decie, 2,490 ft. from S and E, Sec. 7, Blk. 1.
S.D. 815 ft.

COCHRAN COUNTY

Kelsey's No. 1 Slaughter, C Labour 36, League 150, R.C.S. Lands.
Derrick.

West Texas Development Co.'s No. 1 Slaughter, near C of Labour 53, League 149, Randall Co. School Lands.
Derrick.

COKE COUNTY

Haggerty et al's No. 1 Gaston, 340 ft. from S and 654 ft. from W, Sec. 11, Jos. Young Sur. (old well deepening).
T.D. 2,830 ft.

CRANE COUNTY

Cranfill Bros.' No. 1 Tubbs, 330 ft. from S and W of Sec. 11, Blk. B-27, P.S.L. Sur.
Drlg. 1,370 ft.

Gulf Prod. Co.'s No. 1 Henderson, 1,313 ft. from S and 1,322 ft. from E, Sec. 2, Blk.

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Production Is Dropping in Sub-Clarksville Well; New Long Lake and Cherokee County Tests

By L. E. BREDBERG

DALLAS, Tex., Apr. 29.—The three Sub-Clarksville producers of the Gulf Production Co., in the Camp Hill Pool, 7 miles southeast of Palestine, in Anderson County, have not been showing salt water as reported in some sections, but production has been falling off in the discovery well, No. 1 Davey and Royall. That well came in making only gas, but started making distillate and then oil. During the 24 hours ending 7 a. m., April 29, it made only 49 bbls. through one-quarter inch choke on tubing. No. 1 L. B. Ross, about one-half mile west, second well to be completed, is shut in for pipe line connection, and No. 1 Maddox, the best of the three oil wells, made 175 bbls. during the last 24 hours, through one-quarter inch choke. The Maddox well was completed at a total depth of 5,192 feet, making 451 bbls. the first 24 hours through three-quarters inch choke. If it was allowed to produce through a three-quarters inch instead of one-quarter inch choke, the production may at least equal its initial gauge.

Sub-Clarksville production is new in East Texas, so no one can calculate the wells or their lasting qualities. However, Gulf Production Co. apparently believes in their block and structure for the Gulf Pipe Line Co. is linking the field to its main line system at Elkhart with a 6-inch line.

Gulf Production Co. has staked location for No. 2 Robinson, just north of No. 1 Robinson, a shallow test abandoned at 854 feet after it failed to pick up shallow oil or gas in commercial quantities in the Carrizo sand, from which the company is producing one gas well, just north of its Davey and Royall Sub-Clarksv lle discovery. No. 2 Robinson is in the D. Stilts Survey.

R. B. Sanders of Athens, Tex., may make the area interesting with offsetting wells if he drills 15 wells in a program proposed on his S. G. Moore lease in the J. C. Rosson Survey, adjacent to the lease on which the Maddox well is producing. No. 1 test is to be due south of No. 1 Maddox, with 14 others on the other three sides of the lease. Gulf Production Co. holds leases on all tracts surrounding this tract which shows as 28.83 acres on some maps and 36.5 acres on other maps. The first test is to be spudded April 30.

The Railroad Commission has set 10 a. m., May 6, for a hearing for the Camp Hill Pool, Anderson County.

Tide Water Oil Co. and Texas Seaboard Oil Co.'s jointly owned block about 9 miles north of Palestine in the Mound Prairie area, Anderson County, is to be tested immediately. J. B. Daniel of Fairfield, who has drilled two gassers on the P. D. C. Ball lands south of Turl'ngton in Freestone County, is to drill on the C. T. Valentine lands, following results shown by geophysical exploration.

Gulf Production Co.'s No. 1 Rogers, in the Daniel Parker Survey, about 5 miles southwest of Elkhart, is coring at 5,625 feet, showing no signs of oil or gas. Elevation is 301 feet.

Long Lake Area

Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 1 John Smith in the John Adams Survey, about 2 miles north of production in the Long Lake Field, is preparing to test. It is down 5,985 feet, and base of the Austin chalk has not yet been picked up. It is believed to be in the Sub-Clarksville. Elevation is 295 feet. Top of Austin chalk was logged at 4,711 feet. This is the first test drilled in several months.

Up to April 18 the Long Lake Field had produced 66,725 bbls. from two wells. Around 6,000,000 feet of gas per day is being taken by the Lone Star Gas Co. whose 72-mile line to Riesel in McLennan County is being extended about 12 miles to Waco.

Rusk Pool—Cherokee County

T. J. Wood and others are preparing to drill No. 3 New Birmingham Development Co. in the Levi Jordan Survey, 810 feet southeast of their small discovery well which opened the Rusk Pool. Location for the third test is 150 feet out of the southeast corner of a 160-acre tract. These operators abandoned No. 2 test as dry, southwest of the discovery. Up to April 23 the discovery well had produced 49,325 bbls. of 40 gravity oil. Total depth was 5,120 feet, but it was later plugged back and redrilled in an effort to shut off salt water.

Another test in Cherokee County, a wildcat, is to be drilled by H. A. Baker and Florence Oil Co. on the T. Smith lands in the J. Pineda Survey, about 2½ miles north of Jacksonville. A derrick is up for this Woodbine test.

Ball or Turlington Gas Area

Daniels Oil & Royalty Co. has completed its second gasser on the P.B.C. Ball lands in the Augilera Survey, about 3 miles south of Turlington, Freestone County. This well, on the Ball lands, about 1,900 feet northeast of its No. 1 gas discovery, has been completed at a total depth of 4,831 feet for an initial production of 13,000,000 feet of gas through three-quarters inch choke in 10 minutes. Elevation is 421 feet. Shut-in tubing pressure on the well was 1,830 pounds. Open pressure on tubing was 540 pounds. There are no other proposed tests at present, but if Lone Star Gas Co. lays a line from its Long Lake-Waco trunk line, a short distance south of the Ball gassers, north to Dallas, these wells may be connected to the Dallas trunk line, west of the Cayuga Field northeast in Anderson County. The Ball Pool is apparently only a gas reservoir and may insure the Lone Star Gas System another supply of gas in this section.

Imperator Oil Co. of Dallas is to drill on land held by the Hooper heirs in the Johns Survey, Anderson County.

J. W. Kemp Co. has rigged up on the Vol De Long 220-acre tract in the P. Varella Survey, 2½ miles north of Thelma, in Limestone County, for a Woodbine test. Last week a small gasser was completed in this vicinity by Crawford and others of Dallas. Total depth was 2,807 feet.

Douglas Exploration Co.'s No. 1 Hayter location in Nacogdoches County is 2,582 feet from the west line and 1,687 feet from the south line of a 181-acre tract in the Santos Coy Survey, 7 miles northwest of Nacogdoches. It is drilling below 2,350 feet.

In Upshur County, T. D. Humphries is to drill a wildcat on the C. Nations 3-acre tract in the R. Aher Survey, 1½ miles north of Ore City.

Keen Brothers of East Texas have assembled 1,100 acres in a block centering in the I. Wisehart Survey, Fannin County, and are to drill a 2,500-foot wildcat. The block is one-half mile southwest of dry holes drilled by Kean and associates, the tests having encountered showings of oil around 2,200 feet.

Henry and B. F. Allen of Dallas are securing leases on a 6,200-acre block centering in the J. C. Swisher Survey, Fannin County, and are to sink a 2,600-foot test. J. Reed and others of Tulsa are to drill 2,600 feet on a block they are assembling in the same county. This block centers in the D. Rowlett Survey.

T. M. Scott is taking a 11,000-acre block in the southeastern part of Wood County, centering in the Lamar County School Lands Survey, extending into Red River County. A test will be drilled in the near future. This county is getting a good lease and royalty play with Gulf Production Co. scheduled to drill, according to reports. This company has been taking considerable acreage, as have other companies.

A block of 3,000 acres in the B. D. Buckner, J. D. Martinez, J. Taylor and D. Ford Surveys, in Limestone County, has been taken for a test. The acreage will probably be turned to a major company. J. E. Barron, of Thornton, Tex., is working on a block south of the block.

A 15,000-acre block is being taken for the Madelon Corp. in the area in which the Normangee Corp. drilled a dry hole on the Henry farm in the R. Rogers League in Leon County, this year. This block is being reassembled by J. N. Jarrad. Part of it is in Madison County.

Cayuga Field

Forty wells in the Cayuga Field owned by Tide Water Oil Co. and Texas Seaboard Oil Co. have produced 836,533 bbls. of oil up to April 18. Six other producers have run 103,315 bbls., a combined total of 939,848 bbls. from the pool. The field was extended 1¾ miles northeast recently and a second test in that extension is ready to be completed, with two others drilling and more locations announced. Leases in this extension area are held mainly by independents consequently an active drilling campaign is expected.

EAST TEXAS FIELD

Locations in the East Texas Field fell to 82. Completions showed a small gain. Out of the 102 completions, 4 were dry holes. Humble Oil & Refining Co. overstepped the producing limits on the extreme east side, each of London in Rusk County and had to abandon three tests on its Alexander lease in the T. Smith Survey. These were its Nos. 7, 8 and 9 Alexander. Ortiz Oil Co. abandoned a test in Rusk County, on its Cooper lease.

Seven wells were completed as pumpers and two wells were completed swabbing, while one was completed flowing only 40 bbls. in eight hours, by heads.

Sales

Hunter Co. sold its 92¼-acre Spear-Laird lease in the A. Norris Survey, south of the Sabine River in Gregg County, to C. L. McMahon of Tulsa, for a cash and note deal, the latter to be paid out of the production. The lease, developed by Pelican Natural Gas Co., has 10 producing wells.

W. P. Young has purchased the 320-acre E. L. Walker lease in the B. A. Van Sickle Survey, south of Gladewater in Gregg County, from A. Mooney and others on a cash and oil payment basis. The vendors retained a one-eighth overriding royalty on the lease. Five wells are to be drilled.

EAST TEXAS COMPLETIONS

Gregg County

Amerada Petroleum Corp.'s No. 9 Bumpus, top pay 3,554 feet, total depth 3,584 feet, initial production 16 bbls. in 15 minutes through 1-inch choke; No. 10 Continental Bank, top pay 3,574 feet, total depth 3,605 feet, initial production 28 bbls. in 30 minutes; No. 11 Continental Bank, top pay 3,594 feet, total depth 3,630 feet, initial production 60 bbls. per hour through 1-inch choke; No. 10 Hearne, top pay 3,522 feet, total depth 3,535 feet, initial production 155 bbls. in four hours; No. 8 Tooke, top pay 3,513

East Central Texas Wildcats

Week Ending April 27

CAMP HILL AREA—ANDERSON COUNTY

Gulf Prod. Co.'s No. 2 W. Robinson, 380 ft. from S and 330 ft. from E of 100-ac. tract, 50 ft. N of No. 1, D. Stilts Sur. Drlg. 700 ft.

CAYUGA AREA—ANDERSON COUNTY

Clark-Cowden's No. 1 Barton, 550 ft. N and S and 199 ft. E and W lines of 9.86-ac. lease, T. Bristow Sur. Drlg. 110 ft.

Gulf Prod. Co.'s No. 1 O. G. Rogers, 330 ft. out of NW cor. of D. Parker Sur., 5 miles SW of Elkhart. T.S. 5,519 ft.; drlg. 5,785 ft.

Hunt & Son Oil Co.'s No. 1 Scott, 1,196 ft. from N and 830 ft. from W lines, Jos. Crawford Sur. Drlg. 3,415 ft.

J. W. Luttes' No. 1 C. McKee, 2,640 ft. from N line of lease and survey and 330 ft. from W line of McKey 800-ac. tract. Derrick.

Roeser & Pendleton's No. 1 Wathen, 467 ft. out of SE cor. of tract and B. Towles Sur. Drlg. 4,100 ft.

Tide Water-Seaboard's No. 1 J. Smith, John Adams Sur., 668 ft. W of E line and 467 ft. N of S line of 41-ac. tract (Long Lake area). Drlg. 4,750 ft.

Tide Water Oil Co. et al's No. 21-A Wells, 4,079 ft. N and 2,333 ft. W of lease, S. Edmondson Sur. (Trinity test). Drlg. 7,425 ft.

BOWIE COUNTY

Tex-Ark. Oil Co.'s No. 1 Hamilton Estate, 600 ft. E and 350 ft. N lines, J. Milan Sur., 4 miles S of Red River. T.D. 250 ft.

CHEROKEE COUNTY

H. A. Baker et al's No. 1 T. Smith, 630 ft. S and 660 ft. W of SW cor. of W. A. Newton's 260-ac. tract, 2⅛ miles N of Jacksonville, J. Pineda Sur. Derrick.

Jacksonville O. & G. Co.'s No. 1 H. D. Henderson, 660 ft. from N and W lines of 40-ac. tract out of Tankersley 104-ac. tract, 5 miles NE of Jacksonville, J. Pineda Sur. S.D. 693 ft.

Ponta Oil Co.'s No. 1 C. W. Darby, 1,944 ft., S and 630 ft. W of East Cyrus Parks Sur., 2¼ miles S of Summerfield. Drlg. 2,850 ft.

Wilson Stubbs Oil Co.'s No. 1 Rowborts, 450 ft. from S line, 150 ft. from W line of 100-ac. tract, 2 miles SW of Jacksonville, J. D. Wolfin Sur. S.D. 1,553 ft.

T. J. Woods et al's No. 3 New Birmingham Dev. Co., 150 ft. out of SE cor. of 160-ac. tract, 810 ft. SE of No. 1, L. Jordan Sur. Rigged up.

ELLIS COUNTY

Murphee & Coker's No. 1 Coker, 2,900 varas along S line of grant from river and 1,700 varas N at R/A, R. De La Pena Sur. Drlg. 1,350 ft.

FALLS COUNTY

C. P. Schuh et al's No. 1 P. St. Clair, 830 ft. from W and 280 ft. from S of 218-ac. tract, J. A. Manchaca Sur., E of Chilton. T.D. 1,073 ft.; little oil and gas; to put on pump.

FANNIN COUNTY

Wilson, Moore & Smith's No. 1 Mrs. M. Rogers, 150 ft. from N and 900 ft. from E line of Jas. Saunders Sur., in town of Trenton. Drlg. 725 ft.

FREESTONE COUNTY

Hoover et al's No. 1 McFall, 150 ft. S and W lines, S. Garrison Sur., E of Mexia. Location.

GREGG COUNTY

O. T. Clark's No. 1 Williams, 2,100 ft. from S and 2,400 ft. from W of D. Hill Sur., 3 miles NE of Longview. T.D. 3,620 ft.

HENDERSON COUNTY

Great State's No. 1 Ansley, 1,724 ft. W and

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feet, total depth 3,541 feet, initial production 68 bbls. per hour.

Arkansas Fuel Oil Co.'s No. 12-C Lathrop, top pay 3,592 feet, total depth 3,617 feet, initial production 23 bbls. in 15 minutes; No. 7-B McKinley, top pay 3,588 feet, total depth 3,612 feet, initial production 27 bbls. in 15 minutes; No. 9 Orms, top pay 3,537 feet, total depth 3,562 feet, initial production 30 bbls. in 15 minutes. Atlantic Oil Production Co.'s No. 62 Hays, top pay 3,508 feet, total depth 3,554 feet, initial production 120 bbls. per hour; No. 67 Judge, top pay 3,504 feet, total depth 3,528 feet, initial production 110 bbls. per hour; No. 76 Judge, top pay 3,496 feet, total depth 3,527 feet, initial production 120 bbls. per hour.

Beard's No. 8 Ferrell, top pay 3,597 feet, total depth 3,614 feet, initial production 5 bbls. per hour, pumping. Christensen and others' No. 1 Starker, top pay 3,571 feet, total depth 3,578 feet, initial production 60 bbls. per hour. Collins and others' No. 6 Fisher, top pay 3,407 feet, total depth 3,432 feet, initial production 40 bbls. per hour. Empire Gas & Fuel Co.'s No. 11 Green, top pay 3,583 feet, total depth 3,636 feet, initial production 27 bbls. in 15 minutes.

Gulf Production Co.'s No. 9 Clemens, top pay 3,630 feet, total depth 3,660 feet, initial production 70 bbls. per hour; No. 64 Judge, top pay 3,492 feet, total depth 3,509 feet, initial production 60 bbls. per hour; No. 71 Judge, top pay 3,520 feet, total depth 3,533 feet, initial production 60 bbls. per hour. Guiberson Oil Corp.'s No. 10 Stuckey-Thrasher, top pay 3,543 feet, total depth 3,590 feet, initial production 100 bbls. per hour.

Humble Oil & Refining Co.'s No. 21 Harris, top pay 3,465 feet, total depth 3,495 feet, initial production 60 bbls. per hour; No. 12 Killingsworth, top pay 3,585 feet, total depth 3,614 feet, initial production 103 bbls. per hour. Jones & O'Brien's No. 6 McHaney-Loeb, top pay 3,522 feet, total depth 3,570 feet, initial production 30 bbls. in 18 minutes. Long Drilling Co.'s No. 9-A Owens, top pay 3,622 feet, total depth 3,632 feet, initial production 30 bbls. per hour. Navarro Oil Co.'s No. 9 Harris, top pay 3,514 feet, total depth 3,531 feet, initial production 49 bbls. per hour; No. 10 Harris, top pay 3,511, total depth 3,527 feet, initial production 49 bbls. per hour.

Phillips' No. 1 Brazell, top pay 3,622 feet, total depth 3,624 feet, initial production 40 bbls. in 30 minutes; No. 4 Brook, top pay 3,587 feet, total depth 3,593 feet, initial production 30 bbls. in 30 minutes. Powell's No. 4 Wilhite, top pay 3,672 feet, total depth 3,712 feet, initial production 60 bbls. in 30 minutes. Selby Oil & Gas Co.'s No. 8 Snavely, top pay 3,555, total depth 3,570 feet, initial production 33 bbls. in 30 minutes. Sun Oil Co.'s No. 5-A Fuller, top pay 3,641 feet, total depth 3,691 feet, initial production 20 bbls. per day, pumping.

Tide Water Oil Co.'s No. 11 Moore, top pay 3,523 feet, total depth 3,557 feet, initial production 14 bbls. in 10 minutes; No. 13 Shepperd, top pay 3,598 feet, total depth 3,619 feet, initial production 15 bbls. in 10 minutes. Yount Lee Oil Co.'s No. 8-A Fenton, top pay 3,583 feet, total depth 3,603 feet, initial production 25 bbls. in 30 minutes through eleven-sixteenths inch choke; No. 10-C Smith, top pay 3,542 feet, total depth 3,562 feet, initial production 55 bbls. per hour through eleven-sixteenths-inch choke.

Gulf Production Co.'s No. 8 Andrews, top pay 3,564 feet, total depth 3,606 feet, initial production 84 bbls. per hour; No. 29 Alexander, top pay 3,538 feet, total depth 3,566 feet, initial production 72 bbls. per hour; No. 13 Watson, top pay 3,545 feet, total depth 3,574 feet, initial production 80 bbls. per hour; Invincible Oil Co.'s No. 7 Williams, top pay 3,565 feet, total depth 3,580 feet, initial production 145 bbls. per hour. Luttes' No. 2-A Register, top pay 3,680 feet, total depth 3,682 feet, initial production 60 bbls. per hour. Osburn's No. 1 fee, top pay 3,553 feet, total depth 3,563 feet, initial production 40 bbls. per hour.

Shell Petroleum Corp.'s No. 13-A Biven, top pay 3,587 feet, total depth 3,618 feet, initial production 39 bbls. in 30 minutes; No. 40 Watson, top pay 3,570 feet, total depth 3,639 feet, initial production 42 bbls. in 30 minutes; No. 56 Watson, top pay 3,585 feet, total depth 3,649 feet, initial production 35 bbls. in 30 minutes. Sun Oil Co.'s No. 19 Beall, top pay 3,580 feet, total depth 3,600 feet, initial production 80 bbls. per hour. No. 12 Pontecost, top pay 3,577 feet, total depth 3,616 feet, initial production 75 bbls. per hour; No. 2 Walker, top pay 3,685 feet, total depth 3,686 feet, initial production 20 bbls. per hour, swabbing.

Tide Water Oil Co.'s No. 14 Bell, top pay 3,655 feet, total depth 3,659 feet, nitial production 8 bbls. in 10 minutes through 1-inch choke; No. 16 King, top pay 3,563 feet, total depth 3,603 feet, initial production 10 bbls. in 10 minutes through 1-inch choke. Wright-Smith's No. 2 Harris, top pay 3,470 feet, total depth 3,610 feet, initial production 20 bbls. per hour.

Rusk County

Atlantic Oil Producing Co.'s No. 18 Brightwell, top pay 3,571 feet, total depth 3,608 feet, initial production 120 bbls. per hour. Gulf Production Co.'s No. 7 Brightwell, top pay 3,585 feet, total depth 3,601 feet, initial production 57 bbls. per hour through three-quarter inch choke; No. 12 Jernigan, top pay 3,613 feet, total depth 3,625 feet, initial production 65 bbls. per hour through three-quarter inch choke. Humble Oil & Refining Co.'s No. 157 Brim, top pay 3,688 feet, total depth 3,697 feet, initial production 96 bbls. per hour; No. 31-A Laird, top pay 3,597 feet, total depth 3,666 feet, initial production 65 bbls. per hour.

Navarro Oil Co.'s No. 23 Brightwell, top pay 3,598 feet, total depth 3,638 feet, initial production 55 bbls. per hour. Rowan's No. 1 Robertson, top pay 3,622 feet, total depth 3,672 feet, initial production 20 bbls. per hour, swabbing. Royall Petroleum Co.'s No. 2 Taylor, top pay 3,585 feet, total depth 3,684 feet, initial production 10 bbls. per hour, pumping. Shell Petroleum Corp.'s No. 17 Russell, top pay 3,628 feet, total depth 3,693 feet, initial production 43 bbls. in 30 minutes. Tide Water Oil Co.'s No. 14 Moore, top pay 3,658 feet, total depth 3,662 feet, initial production 15 bbls. in 20 minutes through 1-inch choke. Agey Drilling Co.'s No. 1-A Lee, top pay 3,611 feet, total depth 3,632 feet, initial production 15 bbls. per hour.

Collins and others' No. 4 Kelley, top pay 3,612 feet, total depth 3,642 feet, initial production 23 bbls. in 20 minutes through one-half inch choke. Great States Oil Co.'s No. 6 Smith, top pay 3,610 feet, total depth 3,651 feet, initial production 20 bbls. per hour, pumping. Gulf Production Co.'s No. 12 Cashen, top pay 3,775 feet, total depth 3,782 feet, initial production 70 bbls. per hour through three-quarter inch choke; No. 11 Thrash, top pay 3,706 feet, total depth 3,721 feet, initial production 51 bbls. per hour through three-quarter inch choke.

Humble Oil & Refining Co.'s No. 7 Alexander, total depth 3,740 feet, dry and abandoned; No. 8 Alexander, dry and abandoned 3,745 feet; No. 9 Alexander, T. Smith Survey, dry and abandoned at 3,746 feet; No. 9 Blackwell, top pay 3,675 feet, total depth 3,685 feet, initial production 90 bbls. per hour; No. 10-B Holt, top pay 3,725 feet, total depth 3,775 feet, initial production 100 bbls. per hour; No. 37-A Plowman, top pay 3,728 feet, total depth 3,743 feet, initial production 72 bbls. per hour; No. 16-A Silvey, top pay 3,701 feet, total depth 3,783 feet, initial production 80 bbls. per hour; No. 13-A Turner, top pay 3,723 feet, total depth 3,743 feet, initial production 105 bbls. per hour.

Hunt Production Co.'s No. 3 Turner, top pay 3,683 feet, total depth 3,703 feet, initial production 29 bbls. in 11 minutes. H.B.W. Oil Co.'s No. 5 Stroud, top pay 3,540 feet, total depth 3,600 feet, initial production 20 bbls. per hour, pumping. Magnolia Petroleum Co.'s No. 2 Wilson, top pay 3,622 feet, total depth 3,642 feet, initial production 25 bbls. in 15 minutes through 1-inch choke. Ortiz Oil Co.'s No. 1 Cooper, dry and abandoned 3,653 feet. Overton Refining Co.'s No. 1 Thrash, top pay 3,750 feet, total depth 3,806 feet, initial production 75 bbls. per hour.

Rogers' No. 2 Thrash, top pay 3,722 feet, total depth 3,780 feet, initial production 75 bbls. per hour. Slaughter & Metcalf's No. 2 Frederick, top pay 3,555 feet, total depth 3,635 feet, initial production 120 bbls. in five hours, pumping. Stanolind Oil & Gas Co.'s No. 18-A Maxwell, top pay 3,758 feet, total depth 3,777 feet, initial production 27 bbls. in 27 minutes.

Sun Oil Co.'s No. 16 Hendon, top pay 3,538 feet, total depth 3,554 feet, initial production 20 bbls. per hour, pumping. Sutton & Hawkins' No. 1 Thompson, top pay 3,590 feet, total depth 3,664 feet, initial production 25 bbls. per hour. Venable & McClanahan's No. 20 Bridwell, top pay 3,618 feet, total depth 3,649 feet, initial production 80 bbls. in 30 minutes. Venable & McClanahan, top pay 3,618 feet, total depth 3,640 feet, initial production 75 bbls. in 30 minutes.

Smith County

Arcadia Refining Co.'s No. 11-A Green, top pay 3,731 feet, total depth 3,736 feet, initial production 27 bbls. in 25 minutes. Byers & Wolfe's No. 3 Jackson, top pay 3,801 feet, total depth 3,802 feet, initial production 60 bbls. per hour. Genecov & Roosth's No. 1 Lanham, top pay 3,627 feet, total depth 3,641 feet, initial production 75 bbls. per hour. Hunt Production Co.'s No. 19-A Fair, top pay 3,627 feet, total depth 3,641 feet, initial production 75 bbls. per hour.

Illinois Oil Co.'s No. 29 Mayfield, top pay 3,837 feet, total depth 3,838 feet, initial production 120 bbls. in two hours. Sinclair Prairie Oil Co.'s No. 29 Wright, top pay 3,740 feet, total depth 3,745 feet, initial production 30 bbls. in 15 minutes. Sun Oil Co.'s No. 19 Henson, top pay 3,690 feet, total depth 3,701 feet, initial production 80 bbls. per hour. The Texas Co.'s No. 21 Blackwell, top pay 3,666 feet, total depth 3,684 feet, initial production 65 bbls. per hour. Weaver & Perry's No. 10 Wright, top pay 3,692 feet, total depth 3,695 feet, initial production 20 bbls. in 10 minutes.

Upshur County

Culver's No. 1 Smith, top pay 3,705 feet, total depth 3,707 feet, initial production 20 bbls. per hour. Davidson and others' No. 1 Shepherd, top pay 3,674 feet, total depth 3,690 feet, initial production 60 bbls. per hour. Gibson Oil Co.'s No. 6 Smith, top pay 3,682 feet, total depth 3,686 feet, initial production 35 bbls. in two hours. Lyons & Neeley's No. 2 O'Byrne, top pay 3,692 feet, total depth 3,704 feet, initial production 70 bbls. per hour. Mudge Oil Co.'s No. 13-A Richardson, top pay 3,694 feet, total depth 3,743 feet, initial production 30 bbls. in 15 minutes.

Robert's No. 6 Jenkins, top pay 3,620 feet, total depth 3,657 feet, initial production 20 bbls. in 10 minutes. Southland and N.&E.W. Oil Co.'s No. 22 O'Byrne, top pay 3,657 feet, total depth 3,666 feet, initial production 25 bbls. per hour. Sun Oil Co.'s No. 1-B Salter, top pay 3,770 feet, total depth 3,776 feet, initial production 125 bbls. in two hours. Texas Co.'s No. 2 Culpepper, top pay 3,723 feet, total depth 3,725 feet, initial production 40 bbls. in eight hours, by heads.

MISCELLANEOUS COMPLETIONS

Anderson County (Camp Hill Area)

Gulf Production Co.'s No. 1 Maddox, total depth 5,192 feet, initial production 451 bbls. the first 24 hours through three-quarter inch choke, 1.3 per cent b.s. and water; No. 1 Ross, total depth 5,136½ feet, initial production 185 bbls. first 24 hours through three-eighths inch choke, 1 per cent b.s. and water.

Freestone (Ball Gas Area)

Daniels Oil & Royalty Co.'s No. 2 Ball, total depth 4,831 feet, initial production 13,000,000 feet gas through three-quarter inch choke in 10 minutes, shut in casing pressure 1,820 pounds, shut in tubing pressure 1,830 pounds, open pressure on tubing 540 pounds, on casing 1,760 pounds.

Morris County

Sterling & Maraydon's No. 1 Conner, dry and abandoned 4,206 feet, top Woodbine 3,960 feet.

West Texas Fields

(Continued from Page 41)

producers which produce from a 3,800-foot pay. Gas from the Centennial pool is piped to San Angelo by the Oklahoma Natural Gas Co.'s operating company.

Control in the Deep Oil Development Co., Wichita Falls, has been taken over by J. T. Harrell and others of Wichita Falls. The company will be operated under the direction of J. W. Thomas of that city, who succeeds N. H. Martin and has been named president.

Ordovician Test at Zephyr

McDonald & Campbell of Dallas are cutting 15-inch hole below 1,500 feet in their deep test to explore the Ordovician-Cambrian series of limestones and sand near Zephyr in southeastern Brown County. The location is on the M. L. Smith 1,500-acre tract in the G. A. Parker Survey near the center of a block of 11,500 acres leased by Ralph Appeman of Fort Worth for Danciger Oil & Refining Co. McDonald & Campbell of Dallas have the contract to drill to 3,500 feet.

NORTH TEXAS COMPLETIONS

Archer County

L. T. Burns' No. 4 B. H. York estate, total depth 1,409 feet, dry and abandoned. Dobbs and Kunkel's No. 1 R. H. Kunkle, total depth 1,478 feet, dry and abandoned. Fain-McGaha Oil Corp.'s No. 1-B L. F. Wilson (McCrory, trustee), total depth 1,603 feet, dry and abandoned. F. H. E. Oil Corp.'s No. 2 F. Brazina and others, total depth 1,445 feet, top pay 1,436 feet, initial production 88 bbls. per day. L. E. Graves and others' No. 1 W. O. Davis, total depth 1,378 feet, dry and abandoned. W. T. Hutcheson, Jr.'s No. 1 C. L. Abercrombie, total depth 1,555 feet, plugged and abandoned. C. B. Long's No. 14 Logan estate, total depth 1,167 feet, top pay 1,158 feet, initial production 12 bbls. per day. Perkins and Cullum's No. 165 Falls, total depth 1,175 feet, top pay 1,156 feet, initial production estimated 200 bbls. per day; No. 166 Falls, total depth 1,094 feet, top pay 1,074 feet, initial production 20 bbls. per day. Ray and Staniforth's No. 4 J. J. Perkins, total depth 1,605½ feet, top pay 1,601 feet, initial production 200 bbls. per day.

Cooke County

Petroleum Producers' No. 7 Andress Brothers, total depth 1,207 feet, top pay 1,197 feet, initial production 900 bbls. per day flowing. W. F. Russell and others' No. 1 N. Piott, total depth 722 feet, top pay 705 feet, initial production 108 bbls. per day. E. J. Ruwaldt and others' No. 5 Andress Brothers, total depth 1,601 feet, dry and abandoned.

Jack County

Bissey and others' No. 2 Brannon-Smith, total depth 340 feet, dry and abandoned. G. A. Erickson and others' No. 1 C. C. Calvin, total depth 610 feet, dry and abandoned. Cecil Roberts and others' No. 1 W. L. Patton, total depth 810 feet, dry and abandoned. P. J. Rowden and others' No. 1 H. R. Bloodworth, total depth 660 feet, dry and abandoned.

Montague County

Bourland and Gannon's No. 3 Mrs. F. E. Loy (old well deepened, formerly produced from 800-foot sand), total depth 914 feet, top pay 903 feet, initial production 49 bbls. per day. Texas Co.'s No. 1 S. E. O'Neal, total depth 1,800 feet, dry and abandoned.

Wichita County

Blair and Schlaffke Oil Co.'s No. 3 W. B. Honaker, total depth 1,070 feet, top pay 1,054 feet, initial production 40 bbls. per day. Bridwell Oil Co.'s No. 8 Allen and Kemp, total depth 1,053 feet,

top pay 1,041 feet, initial production 25 bbls. per day. L. T. Burns' No. 17 T. Mitchell, total depth 803 feet, top pay 792 feet, initial production 3 bbls. per day; No. 18 T. F. Mitchell, total depth 1,328½ feet, top pay 1,325 feet, initial production 10 bbls. per day. Coppock and Coleman's No. 1 F. E. Hill, total depth 850 feet, dry and abandoned. Gulf Production Co.'s No. 26 R. J. Miller and others (old well which formerly produced from total depth of 1,956 feet, plugged back to 1,921 feet), total depth 1,921 feet, top pay 1,901 feet, initial production 6 bbls. of oil and 2 bbls. of water per day. Humble Oil & Refining Co.'s No. 31 Wichita-Taylor, total depth 839 feet, top pay 830 feet, initial production 7 bbls. per day. King Royalty Corp. and others' No. 4-H Waggoner estate, total depth 1,963 feet, top pay 1,954 feet, initial production 459 bbls. per day pumping. Rathke Oil Co.'s No. 1 T. L. Burnett, total depth 541 feet, dry and abandoned. Texas Co.'s No. 20 Allen and Kemp, total depth 472 feet, top pay 458 feet, initial production 2½ bbls. per day. Waggoner Refining Co.'s No. 4-X Waggoner estate, total depth 1,581 feet, top pay 1,558 feet, initial production 136 bbls. in 24 hours.

Wilbarger County

Shell and Fain-McGaha Oil Corp.'s No. 1 F. Fluhman (old well deepened, formerly produced from total depth of 1,485 feet), total depth 2,086 feet, plugged back to 1,578 feet, top pay 1,575 feet, initial production 20 bbls. per day.

Young County

P. Atchley and F. E. Butler's No. 1 J. P. Atchley, total depth 1,003 feet, dry and abandoned. Petroleum Producers' No. 14 Graham, total depth 690 feet, dry and abandoned; No. 15 Graham, total depth 691 feet, dry and abandoned. Rathke Oil Co.'s No. 2 H. O. Prideaux, total depth 616 feet, dry and abandoned. J. C. Roby and others' No. 1 J. L. Lemmond, total depth 750 feet, dry and abandoned. Tebay and Leberman's No. 1 H. Leberman, total depth 1,015 feet, dry and abandoned. Texas Co.'s No. 7-B Finch estate, total depth 675 feet, top pay 662 feet, initial production 40 bbls. per day.

COMPLETIONS IN WEST TEXAS

Crane County

Gulf Production Co.'s No. 14 Crier-McElroy, top pay 2,715 feet, total depth 2,904 feet, initial production 1,474 bbls. per day.

Howard County

Continental Oil Co.'s No. 12-A Settles, total depth 2,535 feet, shot with 600 quarts from 2,350-2,535 feet, dry and abandoned. C. Henson and others' No. 1-B Scott, top pay 1,315 feet, total depth 1,332 feet, shot with 30 quarts from 1,317-29 feet, initial production 24 bbls. per day, pumping. Sinclair Prairie Oil Co.'s No. 1-B Denman, top pay 2,470 feet, total depth 2,845 feet, shot with 300 quarts from 2,480-2,635 feet, and with 300 quarts from 2,635-2,845 feet, initial production 392 bbls. per day. Herschback Petroleum Co.'s No. 3-B Davis, top pay 2,425 feet, total depth 2,792 feet, shot with 100 quarts from 2,752-92 feet, and with 500 quarts from 2,713-88 feet, initial production 320 bbls. per day, pumping.

Jones County

Richards and others' No. 1 Ransom, dry and abandoned at 750 feet. Cal-Tex Oil Co.'s No. 1 Smith, temporarily abandoned at 2,609 feet. Miller and others No. 1 Black, dry and abandoned at 1,605 feet.

Pecos County

Messenger's No. 1 Sibley, abandoned location.

Winkler County

Sayre Oil Co.'s No. 1 Daugherty, gas pay 2,694 feet, total depth 2,737 feet, initial production 5,000,000 feet of gas. Magnolia Petroleum Co.'s No. 1 Walton, top pay 2,818 feet, total depth 2,964 feet, shot with 110 quarts from 2,818-49 feet, initial production 1,498 bbls. per day. Sayre Oil Co.'s No. 2 Daugherty, top pay 2,805 feet, total depth 2,971 feet, initial production 419 bbls. per day; No. 2-B Howe, total depth 2,968 feet, initial production 605 bbls. per day.

Ward County

Richardson's No. 2 Richter, top pay 2,358 feet, total depth 2,520 feet, initial production 715 bbls. per day. Westbrook and Caton's No. 6 Bennett, top pay 2,342 feet, total depth 2,559 feet, shot with 110 quarts from 2,332-2,559 feet, initial production 1,322 bbls. per day.

COMPLETIONS IN PANHANDLE

Carson County

McGill and others' No. 2 Cooper, top pay 3,037 feet, total depth 3,065 feet, shot 360 quarts from 3,032-65 feet, initial production 498 bbls. per day pumping.

Gray County

Kewanee Oil & Gas Co.'s No. 3 Morgan, top pay 3,208 feet, total depth 3,293 feet, shot 360 quarts from 3,184-3,288 feet, initial production 304 bbls. per day pumping; No. 4 Morgan, top pay 3,150 feet, total depth 3,259 feet, shot 350 quarts from 3,152-3,250 feet, initial production 188 bbls. per day pumping.

Hutchinson County

Texas Plains Production Co.'s No. 2 Watkins, top pay 2,934 feet, total depth 3,006 feet, shot 350 quarts from 2,927-3,006 feet, initial production 317 bbls. per day pumping.

Moore County

Magnolia Petroleum Co.'s No. 2 Watkins, top pay 3,407 feet, total depth 3,408 feet, initial production 125 bbls. per hour, 25 per cent water, with 56,000,000 feet of gas. Texoma Natural Gas Co.'s No. 1-A Moore, total depth 3,550 feet, initial production 30,600,000 feet of gas.

Wheeler County

Champlin Oil & Refining Co.'s No. 4 Edes, top pay 2,527 feet, total depth 2,553 feet, initial production 422 bbls. per day. Helena Oil & Gas Co.'s No. 2 Keller, top pay 2,440 feet, total depth 2,544 feet, initial production 865 bbls. per day on gas lift. Skelly Oil Co.'s No. 14 Derrick, top pay 2,410 feet, total depth 2,520 feet, initial production 648 bbls. per day on gas lift. Smith Brothers' No. 7 Harland, top pay 2,463 feet, total depth 2,513 feet, initial production 2,031 bbls. per day. Texas Co.'s No. 9 Keller, top pay 2,365 feet, total depth 2,539 feet, initial production 1,746 bbls. per day.

Gas Polymerization to Be Major Source of Supply

(Continued from Page 16)

Ipatieff, B. B. Corson and Gustav Egloff, of the Universal Oil Products Co., presented data covering polymerization of olefins in a pilot plant operation in which "solid phospheric acid" was used as a catalyst. A 3,000,000-cubic foot plant to operate with vapor phase cracked gases has been completed at a middle western refinery incorporating this operating principle and will start operating in the immediate future. The yield from this type operation is 3.5 gallons of high octane gasoline per 1,000 feet of gas with the gas remaining, consisting largely of paraffinic hydrocarbons.

Results with several types of vapor phase cracked gases were described by the authors. In one case the "stabilizer gas" was obtained from the top of the stabilizer column used in the stabilization of gasoline produced by vapor phase cracking. The gas showed the following analysis:

	Per cent
Hydrogen	0.8
Methane	3.4
Ethylene	16.0
Ethane	17.8
Propylene	29.0
Propane	22.2
n-Butylene	2.0
iso-Butylene	2.9
Butadiene	3.3
Butane	2.0
Pentane*	0.2
Nitrogen	0.4

The following is typical of run data with this gas:

Operating Conditions			
Hours of test	120	72	72
Gauge pressure, lbs./sq. in	100	100	100
Temperature, °C.	232	232	232
Inlet gas rate, cu. ft./hr./lb. of catalyst	1 7	0 9	0.3
Olefin Content of Gas			
Prolyene and butylenes, %	43 9	42 6	42.7
Ethylene, %	20 2	21.6	21.2
Olefin Polymerization			
Propylene and butylenes, %	84	94	96
Ethylene, %	9	25	32
Gallons of Liquid Polymer and of Gasoline Per 1,000 Cubic Feet of Gas			
Liquid Polymer	7.6	8 5	8 4
Gasoline (I.B.P., 142° F., E.P., 414° F.)	6 3	7 1	7.0

The polymer gasoline obtained by steam distillation of the crude liquid polymer had the following properties:

POLYMER GASOLINE

Gravity, °A.P.I. at 60° F. (15.6° C.)	60.2
Spec. grav. at 60° F. (15.6° C.)	0.738
Color, °Saybolt	25
Color stability*	19
Gum, Mg./100 c.c. (copper dish)	72
Gum + 0.025% Wood distillate inhibitor	2
Induction period + 0.025% Wood distillate inhibitor	610
Sulphur, per cent	0.04
Octane number (C.F.R. Motor Method)	82
Octane blending value (25% in Fuel A-3, C.F.R. Motor Method)	116
Reid vapor pressure at 100° F., lbs.	5.2

100 c.c. A.S.T.M. Distillation

	°F.	°C.
Init. B.P.	142	61
Per cent distilled over:		
5	178	81
10	194	90
20	216	102
30	234	112
40	251	122
50	266	130
60	284	140
70	304	151
80	324	162
90	360	182
Endpoint	414	212

*Equivalent to two hours noon June sunlight.

Doctor Ipatieff, in a second paper on "Catalytic Polymerization of Gaseous Olefins by Liquid Phosphoric Acid," said that ethylene, propylene and isomeric butylenes have been polymerized by phospheric acid to liquid mono-olefins. He explained that the catalytic action of phosphoric acid depends upon its ability to form esters which serve as intermediates in the formation of the polymers. The paper included data showing that various metallic salts and oxides promote the catalytic action of the phosphoric acid.

Additional Papers

Several other papers were presented at the symposium dealing either with the cracking of the hydrocarbon gases, the polymerization of the olefin hydrocarbons or both. K. Frolich and Peter J. Wiezevich, of the Standard Oil Development Co., in a paper on "Cracking and Polymerization of Low Molecular Weight Hydrocarbons," discussed the thermal decomposition of methane, ethane, propane, n-butane, the corresponding olefins and acetylene from the point of view of maximum olefin and liquid fuel production. The investigation included: (1) Simultaneous cracking and polymerization at atmospheric pressure; (2) cracking at atmospheric pressure for maximum unsaturates followed by polymerization at high pressure and lower temperature; (3) an intermediate step introduced in (2) to remove hydrogen by selective oxidation. Propane was studied in the greatest detail. It was found that the removal of hydrogen increased the yield of liquid products almost fourfold. The introduction of air into heated olefins initiates polymerization at much lower temperatures and pressures.

In a paper on "Pyrolysis and Polymerization of Gaseous Paraffins and Olefins," F. W. Sullivan, Jr., R. F. Ruthruff and W. E. Kuentzel, of the Standard Oil Co. (Indiana), reported volume yields of olefins between 75 and 100 per cent under optimum conditions in the pyrolysis of ethane, propane, butane and iso-butane in KA2S coils.

They found that as paraffins higher than ethane decompose largely with the formation of an olefin and a lower paraffin, the weight yield of olefins is less than the volume yield, averaging 60 per cent. Reports were made on polymerization runs of pure ethylene and pure propylene at 500 to 3,000 pounds pressure and under optimum conditions about 75 per cent of the olefins charged were converted to liquid.

New Basic Principle

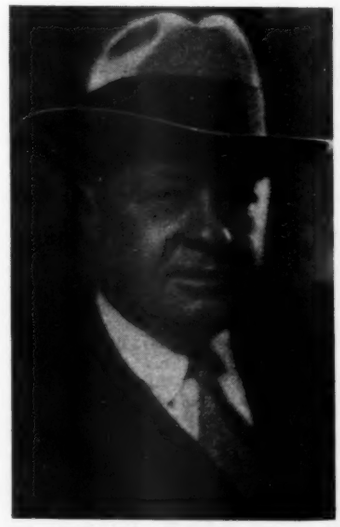
The sessions of the Division of Petroleum Chemistry at which 30 papers were presented including 3 papers at the asphalt symposium, were well attended. The initial paper was by Dr. Gustav Egloff, of the Universal Oil Products Co., parts of which were widely quoted in local newspapers. Doctor Egloff's paper which was the petroleum division's contribution to the Tercentary of the American Chemical Industries, celebrated in connection with this meeting, reviewed the remarkable technical progress of the oil industry in which the petroleum chemist has had an important part, especially in recent years. He pointed out the significance of many of these developments from the standpoint of conserving this country's supplies of crude petroleum. As one phase of this situation, he stressed the fact that the increased yield of gasoline from crude oil over the past 25 years meant a saving in crude oil requirements of approximately 1,000,000,000 bbls.

Frank W. Hall, of the Texas Co., New York, is chairman of the Division of Petroleum Chemistry, and presided at the meetings and the annual dinner held at the Hotel Pennsylvania. C. R. Wagner, of the Pure Oil Co., Chicago, is secretary of the division.

Clyde M. Bennett Dies; Magnolia Vice President

DALLAS, Tex., Apr. 27.—Clyde M. Bennett, vice president and assistant manager of production of the Magnolia Petroleum Co., died here Thursday.

He entered the employ of the Magnolia on December 31, 1931, assisted in organizing the Arkansas-Louisiana division of the Mid-Continent Oil and Gas Association and was its first president.



CLYDE M. BENNETT

He formerly lived at Shreveport, La., becoming an employe there in 1915 of the Arkansas Natural Gas Co. In 1919 he was made a vice president and director of the Louisiana Oil & Refining Corp., in which capacity he remained until 1926 when he became president of the Trinidad Oil Fields Operating Co. Shortly after he was made manager of that company's subsidiary on the island of Trinidad, B. W. I., where he remained until September, 1928, when he became associated with the Vacuum Oil Co. as general manager of the crude oil department with headquarters in New York and Houston.

West Texas Wildcats

(Continued from Page 41)

B-23, P.S.L. Sur.
Rigged up.
Gulf Prod. Co.'s No. 1 M. B. McKnight, 660 ft. from S and W, Sec. 9, Blk. B-21.
Drlg. 900 ft.
Gulf Prod. Co.'s No. 1 Waddell, C NW NW Sec. 4, Blk. B-27, P.S.L. Sur.
S.D. 4,595 ft.
Magnolia Pet. Co.'s No. 1 Edwards, 330 ft. from S and 1,650 ft. from E, Sec. 2, Blk. B-23.
Derrick.

CROCKETT COUNTY

Eppenauer Drlg. Co.'s No. 1-C Powell, 1,600 ft. from S and 250 ft. from E, Sec. 52, Blk. B.B.
Elev. 2,665 ft.; T.P. 2,515 ft.; T.D. 2,556 ft.; testing.
Leslie-Hiller et al's No. 1 Todd, 1,200 ft. N and 330 ft. E, Sec. 26, Blk. WX, G.C.&S.F. Sur.
S.D. 580 ft.
Humble Oil & Ref. Co.'s No. 1 Couch, C NW Sec. 3, Blk. QR, G.C.&S.F. Sur.
Temporarily abnd. 1,581 ft.; elev. 2,538 ft.

CULBERSON COUNTY

Anderson-Prichard Oil Corp., Magnolia Pet. Co. et al's No. 1 Borders, 1,255 ft. N and 2,305 ft. from W, Sec. 34, Blk. 69, P.S.L. Sur.
S.D. 1,125 ft.
Miller Bros.' No. 1 fee, 1,900 ft. from N and 660 ft. from E line of Sec. 21, Blk. 97, P.S.L. Sur.
S.D. 2,137 ft.; slight show gas here.
Wood et al's No. 1 Hall, 250 ft. from S and 85 ft. from E, Sec. 11, Blk. 54½, 16 miles N of Van Horn, P.S.L. Sur.
S.D. 246 ft.

DAWSON COUNTY

Adams & Turner's No. 1 John Robinson, 1,320 ft. from N line, 1,320 ft. from W line of Sec. 46, Blk. M, E.L.R.R. Sur.
T.D. 4,860 ft.; to abandon.

ECTOR COUNTY

Atlantic Oil Prod. Co.'s No. 1 T. P. Land Trust, 440 ft. from N and W of SE Sec. 11, Blk. 43, Twp. 1s, T.&P. Sur.
T.D. 4,391 ft.; plugged back to 4,255 ft.; swabbing.
Barnsdall Oil Corp.'s No. 2 Smith, 330 ft. from S and W lines of Sec. 1, Blk. 43, Twp. 1s, T.&P. Sur.
Elev. 3,064 ft.; drlg. 2,425 ft.
W. A. Black & Sons' No. 3 Connell, 330 ft. from S and 1,310 ft. from W lines of Sec. 1, Blk. B-16, P.S.L. Sur.
Drlg. 3,220 ft.
Callahan et al's No. 1 Connell, 330 ft. from N and 990 ft. from W, Sec. 10, Blk. 30, Twp. 1s.
T.P. 3,515 ft.; drlg. 3,845 ft.
Empire Gas & Fuel Co.'s No. 1 Cummins, 440 ft. from S and E, Sec. 10, Blk. 45, Twp. 1n, T.&P. Sur.
Drlg. 3,126 ft.
Gulf Prod. Co.'s No. 1 Goldsmith, C of NW Sec. 10, Blk. 44, Twp. 1s, T.&P. Sur.
T.D. 3,970 ft.; to set csg.
International Pet. Corp.'s No. 1 Cowden, 660 ft. from S and E, Sec. 25, Blk. 44, Twp. 2s, T.&P. Sur.
T.P. 4,147 ft.; S.D. 4,188 ft.; pulling csg.
Landreth Prod. Co.'s No. 1 Blakeney, 440 ft. from N and E, Sec. 28, Blk. 43, Twp. 1n, T.&P. Sur.
Cellar.
Landreth Prod. Co.'s No. 1-B O. B. Holt, 660 ft. from N and 1,980 ft. from E lines of Sec. 19, Blk. "A," P.S.L. Sur.
Drlg. 1,615 ft.
Landreth Prod. Co.'s No. 1 Cowden Heirs, 440 ft. from S and W, Sec. 18, Blk. 44, Twp. 1n, T.&P. Sur.
S.D. 3,752 ft.; top lime 3,708 ft.
Landreth Prod. Co.'s No. 2 Scharbauer, 2,200 ft. from N and 440 ft. from W, Sec. 13, Blk. 4.
Drlg. 725 ft.
Penrose et al's No. 1 Kloh & Rumsey, 2,310 ft. from S and E, Sec. 31, Blk. 45, Twp. 1s, T.&P. Sur.
Elev. 3,154 ft.; top lime 3,895 ft.; drlg. 4,260 ft.
C. L. Peters' No. 1 Connell, 330 ft. from N and E lines of NW of Sec. 12, Blk. B-16, P.S.L. Sur.
Drlg. 110 ft.

EL PASO COUNTY

Tri-State Oil Co.'s No. 1 Kinkel, 190 ft. from N and 550 ft. from E, Sec. 237, A.T.&S.F. Sur.
S.D. 225 ft.; setting csg.

FISHER COUNTY

George Callihan et al's No. 1 Herring, 2,310 ft. from S and 330 ft. from W lines of Sec. 192, Blk. 1, B.B.B.&C. Sur.
Elev. 1,804 ft.; drlg. 1,622 ft.
Tide Water Oil Co. et al's No. 1 W. E. Hittson et al, 1,320 ft. from N and 660 ft. from W, Sec. 177, Blk. 2, H.&T.C. Sur.
Spudded.

GARZA COUNTY

N. L. Richards' No. 1 Sullivan, 330 ft. from N and W, Sec. 3, Blk. 5, K. Aycock Sur.
Elev. 2,534 ft.; S.D. 2,345 ft.

GLASSCOCK COUNTY

Luce & Pickens' No. 2 Turner, 1,650 ft. from N and 2,310 ft. from E lines of Sec. 19, Blk. 33, Twp. 2s, T.&P. Sur.
T.D. 2,250 ft.; to set csg.
John I. Moore et al's No. 1 J. S. McDowell, 1,980 ft. from N line and 660 ft. from E line of Sec. 22, Blk. 34, Twp. 2s, T.&P. Sur.
Topped lime 9,471 ft.; show oil and gas 9,484-9,520 ft.; cmtd. 7⅝-in. csg. at 9,470 ft.; increase oil 9,594-9,600 ft. and 9,633-55 ft.; S.D. 9,938 ft.; to drill deeper.

HOWARD COUNTY

Clay Bros. & White's No. 1 Read, 330 ft. from S and 1,650 ft. from W, Sec. 46, Blk. 30, Twp. 1n, T.&P. Sur.
Location.
Dorn et al's No. 1 Kloh, 330 ft. from S and E, Sec. 45, Blk. 30, Twp. 1n, T.&P. Sur.
Elev. 2,287 ft.; T.P. 2,585 ft.; T.D. 2,791 ft.; flowed 54⅛ bbls. in 2 hrs. on test.
John I. Moore et al's No. 1 Snyder, 330 ft. from S and W, Sec. 28, Blk. 30, Twp. 1s, T.&P. Sur.
Drlg. 100 ft.
Iron Mountain Oil Co.'s No. 6 Reed, 330 ft. from S and W lines of Sec. 46, Blk. 30, Twp. 1n, T.&P. Sur.
Drlg. 1,932 ft.
Slagel's No. 1 Foster, 990 ft. from S and 330 ft. from W, Sec. 43, Blk. 29.
T.D. 3,012 ft.; plugged back to 2,760 ft.; shot and cleaning out.

JEFF DAVIS COUNTY

C. M. Joiner's No. 1 Jones & Coffield, 770 ft. from N and 1,322 ft. from E. Sec. 8, Blk. 3, H.&T.C. Sur.
Drlg. 1,122 ft.

JONES COUNTY

Campbell et al's No. 1 Rowell, in E half of W half, Sec. 6, T.&P. Sur.
T.D. 950 ft.; fishing.
Campbell et al's No. 1 Enevill, 1,400 ft. from N and 270 ft. from W, Sec. 2, M.E.&P. Sur., ½ mile S of Anson.
S.D. 2,210 ft.
Dr. C. E. Johnson's No. 1 Young, 1,800 ft. from N and 750 ft. from W of SE 290 acres of B. Travenio Sur.
Fishing 2,000 ft.
Owen et al's No. 1 Johnson & Dunwoody, 3,750 ft. from S and 330 ft. from W. Sec. 6, Blk. 17, T.&P. Sur.
Spudded and S.D.
Robb & Brewer's No. 1 Evans, 200 ft. from S and E lines of N half of Sec. 7, Blk. 15, T.&P. Sur.
Drlg. 1,950 ft.
Sandyridge Oil Co.'s No. 1 P. Jones, 660 ft. from S and W of NW¼, Sec. 5, Blk. 15, T.&P. Sur.
Drlg. 1,300 ft.
T. O. Shappell's No. 1 Steele, 330 ft. from N and 2,000 ft. from E lines of Sec. 10, Blk. 15, T.&P. Sur.
Fishing 2,145 ft.
Ungren & Frazier et al's No. 1 Steele, 1,450 ft. from S and 200 ft. from W lines of Sec. 8, Blk. 10, C. Allen Sur.
Drlg. in new hole at 750 ft.

LOVING COUNTY

D. C. Evans' No. 1 W. D. Johnson, 2,310 ft. from N and 1,650 ft. from W, Sec. 12, Blk. 57, Twp. 1, T.&P. Sur.
T.D. 2,033 ft.; set csg. here.
Mason Oil Co.'s No. 1 Kyle, 1,980 ft. from S and E, Sec. 22, Blk. 55, Twp. 1, T.&P. Sur.
T.D. 495 ft.; rigging up rotary.

LYNN COUNTY

Hart Oil Co.'s No. 1 Edwards, 220 ft. from N and 200 ft. from W of SE Sec. 29, L.&S.V. Sur.
Elev. 3,112 ft.; T.D. 4,619 ft.; reaming at 4,530 ft.

MARTIN COUNTY

Wright & Scott's No. 1 Flannigan, 330 ft. N and E, Sec. 22, Blk. 37, Twp. 1s, T.&P. Sur.
S.D. 100 ft. for csg.

MITCHELL COUNTY

Sawtell & Grueber's No. 1 Morrison.
S.D. 1,020 ft.

McCULLOCH COUNTY

Brock & Seward's No. 1 McCall, 2,250 ft. from S and 2,139 ft. from E lines of Sec. 2, John Ware Sur.
Drlg. 750 ft.
Honea et al's No. 1 Cox, 450 ft. from S and 150 ft. from E, David Pope Sur.
S.D. 846 ft.
Geo. Poulter's No. 1 Wyres, 1,350 ft. from S. 150 ft. from W lines of J. Heinsohn Sur. No. 623.
Gas pay 760 ft.; T.D. 760 ft.; set csg.
Geo. Poulter's No. 1 Dutton, 350 ft. from S and 450 ft. from E, Sec. 190, 2½ miles S of Poulter's gas well.
Machine.
Skaggs & Brewer's No. 1 Dunn, 190 ft. from S and 570 ft. from E, Sec. 951, T. L. Hartig Sur.
Drlg. 900 ft.

PECOS COUNTY

Adams et al's No. 2 Masterson, 1,630 ft. from SE and 330 ft. from SW, Sec. 104, Blk. 10, H.&G.N. Sur.
Rigging up rotary.
Cardinal Oil Co.'s No. 1 White & Baker, 2,310 ft. from S and 330 ft. from W, Sec. 51, Blk. Z, T.C. Sur.
S.D. 2,081 ft.
Gulf Prod. Co.'s No. 5 White & Baker, 330 ft. from N and E lines of Sec. 88, Blk. 194, G.C.&S.F. Sur.
Drlg. 2,000 ft.
Samwan Oil Co.'s No. 2 Masterson, 330 ft. from W and 990 ft. from S lines of Sec. 104, Blk. 10, H.&G.N. Sur.
Location.
Trans-Tex. Oil Co.'s No. 1 Caldwell, 330 ft. from E line and 330 ft. from S line of Sec. 27, Blk. 40, Twp. 9, T.&P. Sur.
T.D. 1,856 ft.; testing water shut-off.

REAGAN COUNTY

Byrd-Frost Inc.'s No. 1 Boyd, 1,320 ft. from S and E of Sec. 6, Blk. E, L.V.S.&V. Sur.
S.D. 2,522 ft.
Dobbs No. 1 Friend, 2,310 ft. from S and 660 ft. from W of Blk. 3, Wm. Allen Sur., 3 or 4 miles S of Big Lake.
Fishing 2,250 ft.
John Emch's No. 1 E. V. Belcher, 467 ft. from N and 1,400 ft. from E, Sec. 4, Blk. 4½, G.C.&S.F. Sur.
Drlg. 120 ft.
Skelly Oil Co.'s No. 1-D H. S. Grayson, 1,980 ft. from N line and 660 ft. from W line of Sec. 33, Blk. 8, University Land Sur.
S.D. 9,967 ft.; bridged back to 3,100 ft. to shoot csg.

REEVES COUNTY

J. E. Cunningham's No. 1 Altman, 2,310 ft. from N line and 1,980 ft. from E line of Sec. 1, C. C. Wyatt Sur.
Top Delaware sand (by driller) 3,815 ft.; T.D. 4,090 ft.
Herbert Oil Co.'s No. 1 Williams & Walker, 5,280 ft. from S and 1,320 ft. from E, Sec. 17, Blk. 6, H.&G.N. Sur.
Drlg. 456 ft.
K. Slack et al's No. 1 Reeves, 1,980 ft. from N and W, Sec. 20, Blk. 56, P.S.L. Sur.
Standardizing.

RUNNELS COUNTY

Dennis et al's No. 1 Wash, 550 ft. from N and 560 ft. from E of W half, Sec. 123, E.T.R.R. Sur.
Spudded and S.D.
Melrose Oil Co.'s No. 1 L. P. Woods, 150 ft. from NE lines and 3,475 ft. from W line of survey, Willett Holmes Sur. No. 100.
S.D. 2,507 ft.
R. Wells' No. 1 James, 396 ft. from N and 330 ft. from E of James tract in Sec. 16, D. Diaz Sur.
S.D. 1,100 ft.

SCHLEICHER COUNTY

John M. Cooper et al's No. 1 Bert Page, 1,290 ft. from N line, 1,470 ft. from W line of Sec. 40, Blk. L, G.H.&S.A. Sur.
T.D. 6,045 ft.; pulling tubing to deepen.
W. C. Proctor et al's No. 1 Judkins & Spencer, C SW¼ Sec. 4, Blk. V.28.
S.D. 212 ft. for csg.

SCURRY COUNTY

M. L. Goos et al's No. 1 J. E. Murphy, 330 ft. from N and 1,650 ft. from E, Sec. 114, Blk. 97, H.&T.C. Sur.
Rigged up spudder.
McLaughlin's No. 1 Allen, 1,331 ft. from N and 1,338 ft. from E, Sec. 298, Blk. 97.
S.D. 1,795 ft.

STONEWALL COUNTY

Barnsdall Oil Co.'s No. 1 S. Young, 350 ft. from N and E, Sec. 26, Austin & Williams Sur. 349.
Rigged up cable tools.
Merry Bros. and Perrini et al's No. 1 Williams, C SW of SW Sec. 6, Blk. C, A.B. &M. Sur.
Drlg. 3,325 ft.

SUTTON COUNTY

Teas et al's No. 1 Mower, 1,980 ft. from S and W of Sec. 39, Blk. 5, T.W.&N.G. Sur.
Top White lime 4,527 ft.; S.D. 4,750 ft.; to deepen.
Paul C. Teas' No. 1 G. S. Allison, 660 ft. from S and W, Sec. 49, Blk. A, G.W.T.&P. Sur.
Location.

TAYLOR COUNTY

Eastland Oil Co.'s No. 1 Tittle, 660 ft. from N and W, Sec. 97, Blk. 19, T.&P. Sur., 1 mile NE of Trent.
Machine.

TOM GREEN COUNTY

Jacobs et al's No. 2 DeLong, 150 ft. from N and 450 ft. from E, James Webb Sur. No. 83.
Drlg. 75 ft.

UPTON COUNTY

Baldridge Oil Co.'s No. 1 S. Peck, 440 ft. from S and E, Sec. 29, Blk. 41, Twp. 4s, T.&P. Sur.
Elev. 2,890 ft.; T.D. 3,200 ft.; underreaming.
T.P. Coal & Oil Co.'s No. 1 Cordova Union Land, 2,406 ft. from E and 330 ft. from N, Sec. 33, Blk. 1.
Location.
Gulf Prod. Co.'s No. 103 McElroy, 1,980 ft. from S and 660 ft. from W, Sec. 197, Blk. F, C.C.S.D.&R.G.N.G. Sur.
Drlg. 12,500 ft.
Humble Oil & Ref. Co.'s No. 1 Pollock, C of NW, Sec. 4, Blk. M.
Drlg. 4,857 ft.
Ring Mountain Pet. Co.'s No. 1 Sherk, 330 ft. from S and W, Sec. 29, Blk. 1, M.K.&T. Sur.
S.D. 2,500 ft.
Williams & Williams Drlg. Co.'s No. 1 Robbins, 1,600 ft. from S and 1,900 ft. from E. Sec. 4, G.C.&S.F. Sur.

WARD COUNTY

Atlantic O. P. Co.'s No. 2 Miller, 504 ft. from NE and 330 ft. from SE, W. F. Russell No. 3 Sur.
S.D. 2,304 ft.
Alexander's No. 1 Richter, 1,650 ft. from NW, 1,170 ft. from NE line of Sec. 27, Blk. 34, H.&T.C. Sur.
Drlg. 2,240 ft.
Bradford et al's No. 1 E. R. Allen, 660 ft. from NW line and 551 ft. from NE line, Sec. 11, Blk. 5, H.&T.C. Sur.
T.D. 1,520 ft.; shut down.
Caprito's No. 1 Hardage & Wilson, 2,310 ft. from NE and 990 ft. from SE, Sec. 11, Blk. 34, H.&T.C. Sur.
Material.
Gulf Prod. Co.'s No. 56 O'Brien, 2,310 ft. from N and 330 ft. from E, Sec. 18, Blk. F, T.D. 2,732 ft.; increase oil 3,674 ft.
Gulf Prod. Co.'s No. 57 O'Brien, 2,310 ft. from S and 330 ft. from E, Sec. 18, Blk. F. Drlg. 600 ft.
Magnolia Pet. Co.'s No. 2 Sealy Estate, 2,310 ft. from S and 330 ft. from W, Sec. 43, Blk. F.
T.D. 1,805 ft.; ran csg.
Rector Oil Co.'s No. 1 Monroe, 660 ft. from SE and NE, Sec. 2, Blk. 1, W.&N.W. Sur.
Drlg. 3,875 ft.
Sageland Oil Corp.'s No. 2 Pure-Bennett, 1,650 ft. from NW and 2,310 ft. from SW S.D. 220 ft.
Jerry Sines' No. 1 Brown, 330 ft. from NW and NE, Sec. 13, Blk. 5, H.&T.C. Sur.
Drlg. 2,876 ft.
West Texas O. & R. Co.'s No. 1-C University, 330 ft. from N and E, Sec. 6, Blk. 16. Drlg. 2,062 ft.

WINKLER COUNTY

Barnsdall Oil Co.'s No. 1 Brown & Altman, 2,310 ft. from S and E, Sec. 6, Blk. B-5. Cellar.
Green Prod. Co.'s No. 1 J. F. Cross, 330 ft. from N and 2,310 ft. from W, Sec. 4, Blk. B-10, P.S.L. Sur.
Material.
Harry Adams' No. 2 Scarborough, 990 ft. from N line and 990 ft. from W line, Sec. 2, Blk. 77, P.S.L. Sur.
Location.
Humble Oil & Ref. Co.'s No. 2-A Walton, 660 ft. from S and W, Sec. 48, Blk. 26. Derrick.
Maxwell & Atlantic's No. 2 Daugherty, 990 ft. from S and 330 ft. from E, Sec. 11, Blk. 26, P.S.L. Sur.
T.D. 2,698 ft.; ran csg.
J. C. Maxwell's No. 1 Brown & Altman, 2,310 ft. from N and 990 ft. from W, Sec. 6, Blk. B-5.
Rigged up machine.
Mid-Continent Pet. Corp.'s No. 2 Howe, 1,650 ft. from N and 330 ft. from W, Sec. 12, Blk. 26.
T.D. 2,989 ft.; T.P. 2,800 ft.; standardized.
Richardson's No. 1 Walton, 1,010 ft. from S and 330 ft. from W, Sec. 1, Blk. B-3.
Drlg. 2,720 ft.
Skelly Oil Co.'s No. 2 Halley, 1,320 ft. from N and 2,200 ft. from E, Sec. 25, Blk. B-11, P.S.L. Sur.
S.D. 3,090 ft.
Siosi Oil Co.'s No. 1 Lowett, 330 ft. from N and E, Sec. 36, Blk. 26, P.S.L. Sur.
T.D. 2,595 ft.; fishing.
Sun Oil Co.'s No. 1 Halley, 2,200 ft. from N and 440 ft. from E, Sec. 24, Blk. B-12, P.S.L. Sur.
T.D. 2,656 ft.; ready to deepen.
Texas Pacific Coal & Oil Co.'s No. 2 Daugherty, 1,650 ft. from S and 330 ft. from E, Sec. 2, Blk. 26, P.S.L. Survey.
Drlg. 2,673 ft.

YOKUM COUNTY

C. J. Davidson et al's No. 1 Bennett, 1,320 ft. from N and E, Sec. 678, John H. Gibson Sur.
Drlg. 125 ft.

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Taylor Time Cycle Controlled
TOP HOLE INTERMITTER
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OKLAHOMA CITY
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East Central Texas Wildcats

(Continued from Page 42)

300 ft. S of SE cor. of M. Matthews Sur., N. H. T. Thompson Sur.
S.D. 3,304 ft.; washing to bottom.

Taubert & McKee's No. 1 M. T. Dobbs, NW cor. of east Dobbs 100-ac. tract, 4 miles E of Malahoff and S of Railroad, George Aldrick Sur.
T.D. 4,048 ft.

H. M. Wilson's No. 1 fee, 970 varas S of NE cor. of 943-ac. tract, 5 miles N of Malahoff.
Derrick.

Winn et al's No. 1 Geo. Forrester, cen. of 114-ac. tract, S. Cherry Sur., S of Murchison.
Drlg. 4,340 ft.

HOPKINS COUNTY

D. A. Hale et al's No. 1 L. M. Hall, 200 ft. from N and E lines of 70-ac. tract, 1 mile SE of Miller Bros. A. Caro Sur.
S.D. 2,950 ft.

HUNT COUNTY

Cauble & Thompson's No. 1 Reed, 330 ft. N of northerly NE cor. of C. B. Payne Sur., but in F. Thweatt Sur., 3 miles SE of Greenville.
S.D. 3,435 ft.

J. F. Morrisey & Co., Inc.'s No. 1 Fry, 543 ft. from N and 200 ft. from E of 146-ac. tract, C. Davis Sur.
Location.

H. G. Samson's No. 1 Phillips, 1,200 ft. E of Winan's No. 1 Phillips, University Lands Sur., 2 miles W of Commerce.
Elev. 522 ft.; S.D. 2,065 ft.; (corrected).

KAUFMAN COUNTY

Germany et al's No. 1 Clark, 951 ft. N and 1,000 ft. W of tract, S. Eden Sur.
Washing to botton; T.D. 1,780 ft.

Murry & Emerson's No. 1 G. W. Martin, 1,660 ft. from W and 250 ft. from N of 140-ac. tract, from W. L. C. Butler Sur., 2 miles NE of Kemp.
S.D. 27 ft.

L. P. Kean's No. 1 J. B. Hunter, R. Sowell Sur., 300 ft. from SW and 150 ft. from SE of 50-ac. tract, 4 miles S of Terrell.
S.D. 3,400 ft.

LIMESTONE COUNTY

J. Edward Mills' No. 1 Hunt, 300 ft. from N, 350 ft. from W line 34.75-ac. tract, Israel Wood Sur., 3 miles NE of Kosse.
T.D. 3,637 ft.; fishing.

C. F. Carter's No. 1 Dean, 660 ft. from SE and 330 ft. from SW lines of 75-ac. tract, P. Valella Sur., 3½ miles SW of Mexia.
T.D. 1,758 ft.

Doughtry et al's No. 1 S. Welch, 150 ft. from NW and 900 ft. from NE of 77.64-acre tract in A. Varilia Sur., 4 miles W of Groesbeck.
Top sand 2,940-51 ft.; show oil; coring 2,975 ft.

McLENNAN COUNTY

Mahan et al's No. 1 Mann, 1,100 ft. W of Simms Oil Co.'s No. 1 Mann, Carlos Tampo Sur., W of Robertsonville.
Drlg. 700 ft.

NACOGDOCHES COUNTY

A. D. Boyd's No. 1 Mattaner, 400 ft. S and 1,000 ft. E of J. A. Cherino Sur., near Cherino.
Location.

Douglas Exploration Co.'s No. 1 Hayter, 1,687 ft. from S and 2,582 ft. from W lines of tract, Santos Coy Sur.
Material.

K. L. McHenry's No. 1 E. J. Campbell, Manvel de los Santos Coy Sur., 1,500 ft. from NW cor. of 181-ac. tract, 7 miles NW Nacogdoches.
Drlg. 2,415 ft.

Morrow et al's No. 1 C. B. Watkins, 150 ft. from N line and 330 ft. from NW lines of 160-ac. tract, 3 miles S of Caro, H. Y. Bailey Sur.
S.D. 4,170 ft.

NAVARRO COUNTY

Bennett Brothers' No. 1 T. E. Stewart, 150 ft. from NE line of lease, 10 miles SW of Corsicana, Wm. R. Bowen Sur.
T.D. 1,186 ft.; S.D.

R. B. Codding et al's No. 1 Lela Kent, 450 ft. from S line and center of N and S lines of lease, 3 miles NE of Chatfield, C. B. Emmons Sur.
S.D. 1,340 ft.

W. J. Keeling et al's No. 1 J. F. Rushing 484 ft. from N line and 150 ft. from W line of 184-ac. tract, 6 miles SW of Richardson, Henry Ford Sur.
T.D. 2,881 ft.

McCullough et al's No. 1 C. Berry, 330 ft. from SE cor. of 35-acre tract, 1 mile W of Dawson, William Moss Sur.
S.D. 1,182 ft.

Wiggins et al's No. 1 Donoho, 450 ft. from N and 1,101 ft. from E lines in John Couple Sur., SW of Corsicana.
S.D. 1,439 ft.

RED RIVER COUNTY

Dinger's No. 1 W. T. Norris, 1,000 ft. from S and 1,900 ft. from W of 400-ac. tract, Jos. Guest Sur., 1 mile S of Detroit.
S.D. 1,861 ft.

Joiner's No. 1 D. Rust, C. C. Wilborn Sur., 234 ft. N and 254 ft. W of most southerly SE cor. of Sur., just south of Avery.
Rig.

RUSK COUNTY

Ben Lamb's No. 1 H. Leath, 330 ft. out of NW cor. of 185-ac. tract in L. J. Dooley.
S.D. 4,725 ft.; (corrected); may plug back.

Richardson's No. 1 Wood.
Derrick.

SMITH COUNTY

Cloud et al's No. 1 Dendall, 330 ft. from S and W of 55-ac. tract, J. Williams Sur., 3 miles E of Van Field.
S.D. 1,650 ft.

W. R. Harrison's No. 1 Rushing, J. Herring Sur. (O.W.O.D.)
T.D. 4,330 ft.; S.D.

TITUS COUNTY

S. Rotondi's No. 1 Lillianstun, 1,200 ft. E from NW cor. of J. Bodt Sur. and 330 ft. N, but in W. H. Crawford Sur., 5 miles NE of Talco.
Elev. 301 ft.; derrick.

UPSHUR COUNTY

T. D. Humphries' No. 1 C. Nations, Inc., SW cor. 3-ac. tract, R. Aher Sur., 1½ miles N of Ore City.
Derrick.

VAN ZANDT COUNTY

J. H. Foster et al's No. 1 Breucher, 330 ft. out of SE cor. of tract, D. Clapp Sur., 4 miles SE of Wills Point.
Drlg. 2,330 ft.

Green and Winn's No. 1 Eaton, 330 ft. out of most westerly SW cor. of J. Wilson Sur., 2 miles SE of Martin.
Drlg. 4,575 ft.

J. Beren et al's No. 1 Bryant, 483 ft. N of same operator's dry hole, Nacogdoches County School Land Sur.
W.O.S.R. 1,325 ft.

Beren et al's No. 2 Palmer, 544 ft. from S and 686 ft. from E of 69.5-ac. tract, Nacogdoches County School Land.
T.D. 1,324 ft.

Southwest Texas Wildcats

(Continued from Page 40)

S.D. 3,014 ft.; (depth corrected); preparing to deepen.

DUVAL COUNTY

Mills Bennett's No. 1-A D.C.R.C., 330 ft. from S and E lines, Blk. 17, Sur. 100.
Abd. 1,790 ft.

Buffalo-Texas Syndicate's No. 1 Escobas, 2,777 ft. from N line, 1,944 ft. from W line of 930-ac. tract in San Francisco grant.
S.D. 4,010 ft.

Intrepid Oil Co.'s No. 2 Parr, 330 ft. from N and W lines of 80-ac. tract, Sur. 115.
S.D. to drill wtr. well.

Henderson & Harvey's No. 1 Chernosky, 330 ft. from S line, 660 ft. from W line, Sur. 226.
T.D. 2,650 ft.; P.B. to 2,220 ft.

Magnolia Pet. Co.'s No. 1 Bennett, 330 ft. from S and W lines of Sur. 441.
Digging pits.

J. J. O'Byrne's No. 1 Ball, 330 ft. from S and W lines of Tract 3, Santas Flores grant.
Moving in material.

Pearson et al's (Grimes et al) No. 1 Fitzsimmons, 300 ft. from S line, 150 ft. from E line of Sur. 291.
Sand 4,369-76 ft.; oil odor; no test; standing 4,552 ft.

Santa Clara Oil Co.'s No. 1 Wood-Welder, 330 ft. from NE cor. of NW¼ of Sur. 385.
Drlg. 1,000 ft.

Texia Oil Co.'s (Johnson Bros.) No. 1 Hubbard, 990 ft. out of SW cor. of Sur. 84.
Drlg. 2,150 ft.

FAYETTE COUNTY

Clark et al's No. 1 Becker, 750 ft. NW line, 1,300 ft. SW line of 143.74-ac. tract in A. E. Baker League.
Abd. location.

Ross Fenton's No. 1 Kasper (263-ac), 3,000 ft. from NE line, 1,280 ft. from SW line, of Thos. Green Sur. No. 28.
Checking titles.

FRIO COUNTY

Amerada Pet. Corp.'s No. 1 Davies, 1,320 ft. from NW line, 330 ft. from NE line of B. L. Crouch Sur.
T.D. 3,921 ft.; I.P. 35 bbls. per hr.; shut in for storage.

W. T. Shoemaker's No. 1 M. Roche, 150 ft. SW cor. of Carl Wenzel Sur. No. 139.
Sand 2,365-71 ft.; drlg. 3,220 ft.

GOLIAD COUNTY

Keystone Royalty Co.'s No. 1 M. Woods, SW part of county.
Moving in material.

GONZALES COUNTY

Southwestern Synd., Ltd.'s No. 1 W. S. Atkinson, 2,054 ft. from N line, 1,034 ft. from E line of 185-ac. tract in S. Y. Reams Sur. No. 51.
S.D. 5,700 ft.

GUADALUPE COUNTY

A. D. Locke's No. 1 Lowman, 210 ft. from SE and SW lines of 2,500-ac. tract in C. Campbell Sur.
T.D. 1,810 ft.; changing to rotary to whipstock 1,275 ft. to get post tools lost in hole.

Mineral Oil Corp. of Texas' No. 1 Allen Phillips, 162 ft. from N line, 900 ft. from E line of tract, Cor.inos Sur.
Rigging up.

J. S. Suttle's No. 2 Baenziger, S of Seguin. Old well; R.U. to W.O.

Suttle et al's No. 1 Baenziger, 700 ft. from S line, 500 ft. from E line of 125-ac. tract, Monsola Sur.
C.O. 2,153 ft.; to treat with acid.

Seidemann et al's No. 2 Seidemann, 400 ft. from NW line, 360 ft. from NE line of 147.5-ac. tract, Esnaurrizer Sur.
Drlg. 2,980 ft.

L. E. Trout's No. 1 McKee, 650 ft. from W line, 150 ft. from N line of tract, Green DeWitt Sur.
Fishing 3,100 ft.

HIDALGO COUNTY

Downey & Morton's No. 1 Daskom, 450 ft. from E line, 55 ft. from S line of Blk. 34, Por. 45.
Cmtd. csg. 4,115 ft.; W.O.C.

E. H. Eas.'s No. 1 Carter, 330 ft. from E line, 900 ft. from N line of Blk. 19, East Retama Subd., Tule grant.
1,600 ft.; no report.

Nutex Oil Co.'s (Hankamer & Camp) No. 1 F. Rapp, 330 ft. from E line, 990 ft. from S line of 511-ac. tract, Laguna Seca Lge.
Drlg. 5,000 ft.

E. L. Smith's No. 1 Salinas, 548 ft. from N line, 1,001 ft. from W line, Share 10, Porcion 41.
Abd. at 3,011 ft.

E. L. Smith's No. 1 Flores, 330 ft. from N line, 1,903 ft. from E line of Tract 350, Porcion 39.
Moving in rig.

Union Sulphur Co.'s No. 3 American Rio Grande Land & Irrig. Co., 400 ft. from S line, 600 ft. from E line of Lot 2,082, Blk. 88, 200 ft. W of No. 2.
T.D. 7,943 ft.; I.P. 10½ bbls. per hr.; ¼-in. choke; 750 lbs. pressure.

JIM HOGG COUNTY

Miller & Pippin's No. 1 Yeager, 527 ft. S line, 150 ft. E line of Blk. 6, Sur. 20.
S.D. 3,100 ft.

A. Edmiston's (Southwestern Dev. Synd.) (formerly John D. Norwood) No. 1 C. W. Hellen, 330 ft. N and W lines, NW¼ NW¼ Sur. 48.
S.D. 1,600 ft.

JIM WELLS COUNTY

Joe Lundin's No. 1 T. C. Hewitt, 330 ft. SE cor. Sec. 51, McKinney & Williams Sur.
Drlg. 2,450 ft.

Maer & Shira's No. 1 Schaeffer, 1,320 f.. E of NW cor. center of Blk. 15, of subdivision of ranch.
Set 10-in. csg. at 341 ft.; W.O.C.; (depth corrected).

KARNES COUNTY

Henderson & Harvey's No. 1 Jauer, 330 ft. SE of SE line of Jauer 39-acre tract and 33 ft. SW of SW line of James O'Neal Sur. and in A. Borsheimer Sur., near line of Wm. Dixon Sur.
Dry and abd. 3,205 ft.

H. A. Pagenkopg's No. 1 T. J. McAda, 330 ft. from NE and NW lines of Tract C, Martinez Sur.
Drlg. 4,168 ft.

R. G. Tonkin's No. 2 Henke, 1,650 ft. from S and E line of tract.
Location (making arrangements for derrick).

KERR COUNTY

Meteor Oil Co.'s (Edminton & Walker) No. 1 Whitworth, 1,160 ft. from S line and 1,323 ft. from E line of Sec. 1,439, of the H.E.W.T. Sur.
S.D. 950 ft.

Jeff Love and Eastland Oil Co.'s No. 5-E Jeff Love, 1,500 ft. SE of No. 1 and 1,530 ft. from SE cor. and 300 ft. from N line of Sec. 1,591.
Drlg. 5,400 ft.

KLEBERG COUNTY

Parr & Ponder's No. 1 Sam Michalk et al, 5 miles SE Kingsville.
No report.

LASALLE COUNTY

C. W. Benk's No. 1 Feliz, 1,300 ft. from S line, 300 ft. from W line of Sur. 47.
S.D. 1,815 ft.

S. H. Killingsworth's No. 1 Yeager, 100 ft. from W line, 300 ft. from N line, Sec. 94, Blk. 5, Lot 10.
Drlg. 980 ft.

LEE COUNTY

Jas. E. Pederson's No. 1 Turner, 1,860 ft. from N line, 150 ft. from E line of tract, David Hudson Sur.
T.D. 6,560 ft.; P.B. to 6,150 ft.; preparing to perforate csg.

Stowe & Scharlach's No. 1 Otto.
T.D. 1,700 ft.; standing; moving in new boiler to deepen to Edwards lime.

LIVE OAK COUNTY

Baugh & McMillan's No. 1 Walton & Campbell, 1,500 ft. NE line and SE line of D. R. Fant Sur.
S.D. 3,214 ft.

Henderson Coquat's No. 1 Central Co., 310 ft. from S and W lines, Sec. 12, Blk. 43, Simon Subd.
Coring shale 1,500 ft.

Henderson Coquat's No. 1 Reagan, McGloin Sur., E of Nueces River and S of Oakville.
Spudded.

Henderson Coquat's (Luling O. & G. Co.) No. 1 Rex, 330 ft. from SE and SW lines of 629-ac. tract, C of SW¼ of G.H.&H. Sur., Abst. 197, 3 miles S of Mileska.
Drlg. 2,100 ft.

Neversuch Oil Co.'s No. 1 H. H. Ueckert, 330 ft. from W line, 330 ft. from S line of 320-ac. tract, Blk. 121, Wm. Hatton Sur.
Dry and abd. 2,281 ft.

L. D. Ormsby's No. 2 Etta Terrell, 1,400 ft. from NW line, 200 ft. from NE line of tract, E. Jurdin Sur.
S.D. 1,520 ft.

J. O. Whittington's No. 1 Little, 1,320 ft. NE of S cor. of M. M. Shipp Sur., 330 ft. N of S line.
T.D. 5,758 ft.; Pettus dry; to perforate csg. at 4,200 ft.

McMULLEN COUNTY

Inland Oil Co.'s No. 1 Lark, 150 ft. from N and W lines of 407-acre tract, Scrugham Sur.
Cored sand.

Brown & Nessly's No. 1 Dr. Worley, 9,930 ft. N of river along W line of O'Boyle Sur., 1,399 ft. E at R/A.
Spudded.

Chas. A. Hall's No. 1 B. C. Claunch, 368 ft. from N line, 160 ft. from E line of 25-ac. tract, Michael Haley Sur.
Location.

Howeth & Swiger's No. 1 Rhodes, near C 990 ft. from N and W lines of Sec. 22, M. F. Lowe Sur.
Cored sand 2,787 ft.

Texio Oil Co.'s No. 1 Ellen Atkinson, 330 ft. from S and W lines of 80-ac. tract, Martha J. Deen Sur., Sec. 13.
Moving in material.

MEDINA COUNTY

Dupre & West's No. 1 Mott, 100 ft. from E line, 810 ft. from N line, J. Bell Sur. No. 1,478.
Drlg. 100 ft.

John Lind's No. 1 Jungman, 2,050 ft. from N line, 550 ft. from W line, J. Degat Sur.
Fishing 1,500 ft.

Scoggins & Sanders' No. 1 L. W. Burrell,

150 ft. from E line, 1,750 ft. from N line of M. E. Gage Sur. 395.
Abd. at 1,580 ft.
W. T. Shoemaker's No. 1 Noonan, 52.6 ft. S 2 deg. 20 ft. E of old well, Sec. 349, M. Simon Sur.
Drlg. 312 ft.; to set csg. at 435 ft.

REAL COUNTY

H. J. Heartwell et al's No. 2 L. J. Maby, 250 varas from NW line, 775 varas from SW line of A.B.&M. Sur. No. 175.
Drlg. gas sand 3,050 ft.

SAN PATRICIO COUNTY

Masterson et al's (Tom Graham) No. 1 Wurzbach, 330 ft. from W line, 4,250 ft. from S line of C. C. Hornsby Sur.
Drlg. 5,500 ft.; no sand yet.
Plymouth Oil Co.'s No. 1-C Welder, 10 mi. NE Sinton, 2,700 ft. from S line (river), 300 ft. from W line of tract.
T.D. 5,508 ft.; I.P. 11 bbls. per hr.; ⅝-in. choke; 165 lbs. tubing pressure; 240 lbs. csg. pressure.

STARR COUNTY

Armstrong, Emmanuel & Adams' No. 1 S.C. C.C., 330 ft. from S and E lines of Blk. 57, Porcion 88-89.
Recompleting at 2,740 ft.
C. R. Borah's No. 1 A. Guerra, San Jose grant, 330 ft. from N and 150 ft. from E lines of Sec. 6 (NE part of county).
Drlg. 3,012 ft.
John H. Clopton's No. 1 Dioncia Lopez de Tijerina, Blk. 4, Tract C-14, Porcion 80.
Standing 1,320 ft.
Crawford et al's No. 1 Hicks et al, 187 ft. from NW line, 318 ft. from NE line of Blk. 6, Pedernal grant.
S.D. 1,615 ft.
Comroe Drlg. Co.'s No. 1 Guerra, 330 ft. from NE and SE lines of Blk. 35, J. N. Crawford Subd., Por. 56, Jurisdiction of Mier.
T.D. 2,270 ft.; drlg. 1,040 ft.; sidetracked hole at 900 ft.
Heep Oil Co.'s No. 1-A Guerra, Blk. 35, few feet from No. 1, Porcion 55.
Drlg. 1,275 ft.
Hiram Reed's No. 1 Black Bros., Tract A-28, Prcion 80, Blk. 4.
Setting csg. and will gun perforate at 1,500 ft.
Dale Sneed's No. 1 Y. and V. Guerra, 330 ft. W. line of Por. 68, 330 ft. S line of 1,000-ac. block of N end of Por. 92, in Por. 68.
Standing 330 ft.
Sunray Oil Co.'s No. 1 Lopez, 2,600 ft. from N line, 880 ft. from E line, Porcion 75.
Drlg. 2,330 ft.

TRAVIS COUNTY

Anderson's No. 1 A. D. Beham.
T.D. 510 ft.; no report.
D. Prewitt's No. 1 Ed Peterson, 150 ft. from SE and SW lines of tract, L. Kimbro Sur.
Rigging up; S.D.

WEBB COUNTY

Payne et al's No. 1 Hoggterp, 450 ft. from SE line, 300 ft. from NE line, Blk. 5, Sur. 1,110, W of Oilton.
Coring 1,755 ft.
Arthur H. Wray's No. 1 Geo. Stuempke, Share 1, Brewster pasture, Galan grant.
Drlg. shale 320 ft.

WILLACY COUNTY

W. T. Daniel's No. 2 Armendiaz, near Rio Hondo, 7,798 ft. from E and W lines of Share 14.
3,250 ft.; no report.
Kingwood Oil Co.'s No. 1 Santa Rosa, Inc., 160 ft. from E line, 637 ft. from S line of Sec. 30, Blk. 16, Share 44, San Juan de Carricitas grant.
Set and cmtd. surface csg.

WILLIAMSON COUNTY

Gault & Mimms' No. 1 H. V. Seggren, 1,000 ft. from W line, 300 ft. from S line of 450-ac. tract, Bevil Sur. No. 56.
S.D. 913 ft.
Goff et al's No. 1 Timmerman, Cartwright Sur.
S.D. 1,146 ft.
Hays et al's No. 1 Pfluger, 150 ft. from E line, 150 ft. from S line, White Sur.
Showing oil in Serpentine at 915 ft.
J. Morgan Russell's No. 1 Nelson, 1,150 ft. S line, 1,115 ft. E line of John L. Justice Sur. No. 2.
S.D. 894 ft.

WILSON COUNTY

Universal Oil Co.'s No. 1 Burney, 330 ft. NE and SE lines, Arocha Survey, edge of Floresville townsite.
T.D. 635 ft.; I.P. 30 bbls. per day.

ZAPATA COUNTY

F. H. Crow et al's No. 1 Daniel Yzaguirre, 330 ft. out of SW cor. Share 1, Porcion 14-15-16, D. Yzaguirre tract.
Location for 3,500-ft. test.
Danvers & Harrison's No. 1 D. A. McAskill, 660 ft. SE and SW lines, Blk. 51, Edwards Subd., Borrego grant.
Set and cmtd. csg. 20 ft.
H. & M. Oil Co.'s (Virginia Hardee) No. 1 Slator, 514 ft. from SW line, 150 ft. from SE line of Blk. 65, Borrego grant.
Standing 22 ft.
Texas Royalty Investment Co.'s No. 1 N. J. Vela, 686 ft. from NE line, 300 ft. from NW line, Blk. 7, Por. 29.
Gas show at 2,273 ft.
E. L. Smith Oil Co.'s No. 1 R. Hinnant, NE cor. of Blk. 27, Sur. 307.
Moving in material.

Southwest Texas Proven

Week Ending April 27

CAESAR—BEE COUNTY

Caesar Oil Co.'s No. 3 R. E. Miller, 1,900 ft. from W line, 330 ft. from S line of F. Lewis Sur.
Had gas blowout at 1,100 ft.; no report.
Caesar Oil Co.'s No. 5 R. E. Miller.
2,700 ft.; no report.
Firm Oil Co's No. 2 Grissom, 1,750 ft. from W line, 150 ft. from N line, McEarly Sur.
Coring for sand (no depth given).
J. G. Puterbaugh, SW cor. of tract, F. Lewis Sur.
Rig up.
El Toro Oil Co.'s No. 1 J. J. Grisson, 150 ft. from N and W lines of 10-ac. tract, P. B. Early Sur.
Spudded.
El Toro's No. 2 Gardner.
T.D. 3,030 ft.; I.P. 35 bbls. per hr.
Tothen Oil Co.'s No. 1 Hudman, 150 ft. from N and E lines of lease in Chas. Baker Sur.
T.D. 3,117 ft.; to penetrate at 3,075-90 ft.
Swiger et al's No. 3 Gardner.
Abd. 3,036 ft.

DIRKS—BEE COUNTY

Dirks Bros.' (Conservative Oil Co.) No. 1 Harris, 330 ft. S of N line, 330 ft. W of E line of 30-ac. tract, J. L. Dugat Sur.
Derrick.
Dirks Bros. and Wrightsman's No. 2 Roth, 660 ft. N of No. 1, 330 ft. from N and W lines of N½ of SW¼ of Sec. 7.
Moving in material.

RAY POOL—BEE COUNTY

Leslie McKay, trustee's No. 1 Phil L. Campbell, 700 ft. from N line, 150 ft. from E line of W. B. Blanchard Sur.
Drlg. below surface csg.

TULETA—BEE COUNTY

Interallied Oil Co.'s No. 1 Nix, center of Blk. 6 of W½ of Sec. 20.
Drilled plugs at 4,001 ft.
Edwin M. Jones' No. 7 D. E. Robinson, 660 ft. W of No. 6, 330 ft. from N line of SW¼ of Sec. 5, J. M. Uranga grant.
T.D. 3,944 ft.; I.P. 200 bbls. per day; ¼-in. choke; 900 lbs. tubing pressure; 1,000 lbs. csg. pressure.
Edwin M. Jones' No. 16 Robinson, one location N of No. 13, Sec. 5.
T.D. 3,966 ft.; 100 bbls. per day; 1,000 lbs. tubing pressure; 1,200 lbs. csg. pressure.
Edwin M. Jones' No. 3 Rapp, 660 ft. due N of No. 7 Robinson, Sec. 5.
Drlg. 2,400 ft.
Edwin M. Jones' No. 1 Unsicker, 330 ft. from S and E lines of Sec. 6.
Set surface csg.
Heyser Heard & Walton's No. 2 Perez, C of Blk. 16, of SW¼ of Sec. 8.
1,500 ft.; no report.
Mills Bennett Prod. Co.'s No. 1 Basinger, 330 ft. from N and W lines of NE¼ of NW¼ of Sec. 7, J. M. Uranga grant.
Drlg. 3,853 ft.
Southwest Exploration Co.'s No. 1 Heyden & Bruckhan, C of farm tract, 330 ft. from N and W lines of Sec. 30, Uranga grant.
Rigging up.
Stanolind O. & G. Co.'s No. 1 Walton (Marlone), 1,119 ft. from N line, 230 ft. from W line of SW¼ of Sec. 21.
Moving in material.
Wrightsman Oil Co.'s No. 1 Kimball, 1,200 ft. from NW line, 1,500 ft. from NE line, S. Winship Sur.
Standing 1,800 ft.

VON ORMY—BEXAR COUNTY

N. G. Carter's No. 1 F. Bilhartz, 150 ft. from N and E lines of lease, F. Rolen Sur. No. 48.
Drlg. 755 ft.
Tawalter & Umburn's No. 2 Wentz, 150 ft. from S line, 700 ft. from E line of tract in John Simpson Sur.
S.D. 425 ft.

GOVERNMENT WELLS POOL—DUVAL COUNTY

Bridwell Oil Co.'s No. 2 J. D. Southerland, 660 ft. due N of No. 1, 330 ft. from E line of Sec. 122, H.E.&W.T. Sur.
Rig up.
Central Producers' No. 4 Wendt, 990 ft. from E line, 330 ft. from N line, Sur. 43.
Rigging up.
Humble O. & R. Co.'s No. 1 James E. Welder, 330 ft. from S line and W line of E 220 acres of Sur. 72.
Moving in rig.
Magnolia Pet. Co.'s No. 8 M. Ruiz, 1,036 ft. from SE line, 330 ft. from SW line of Sur. 574.
Rigging up.
Magnolia Pet. Co.'s No. 42 D.C.R.C., 600 ft. N of No. 34, 2,312.7 ft. from N line, 330 ft. from E line, Sec. 208, J. Poitevent Sur.
Derrick.
Magnolia Pet. Co.'s No. 1 C. W. Hahl, 330 ft. from N and E lines of Sur. 67.
Abd. 2,945 ft.
Magnolia Pet. Co.'s No. 14 J. O. Wilson, 660 ft. S. of No. 9, 330 ft. from W line of Sec. 124, G.B.&C.N.G. Sur.
Fishing 2,366 ft.
Parr Oil Corp.'s No. 1 R. E. Glover, 330 ft. from S and W lines of SE¼ of SE¼ of Sec. 44, J. Poitevent Sur.
Location.
Parr Oil Co.'s No. 2 R. E. Glover, 330 ft. from N and W lines of SE¼ of SE¼ of Sec. 44, J. Poitevent Sur.
Location.
Parr Oil Corp.'s No. 3 R. E. Glover, 330 ft. from N and E lines of SE¼ of SE¼ of Sec. 44, J. Poitevent Sur.
Location.
Parr Oil Co.'s No. 3 Heller, 330 ft. from NE line of E½ of SW¼ of Sur. 44.
Testing sand 2,320-35 ft.
Reynosa Oil Co.'s No. 3 Lundell, 330 ft. from S and E lines of NE¼ NE¼ of Sur. 60.
Abd. location.
Russ Pet. Co.'s No. 1 Hahl, 330 ft. from N and E lines of SW¼ SE¼ Sur. 64.
Testing 2,521-25 ft.
Sun Oil Co.'s No. 7 Cuellar Motor Co., 701 ft. E of No. 3, 330 ft. from S line of Sec. 576, B.S.&F. Sur.
Location.
Sun Oil Co.'s No. 8 Cuellar Motor Co., 701 ft. E of No. 7, 330 ft. from S line of Sec. 576, B.S.&F. Sur.
Location.

HOFFMAN—DUVAL COUNTY

Conway & Butscher's No. 2 Hoffman, 330 ft. S, 325 ft. E of SW cor. of Sur. 120 in Sur. No. 116.
Coring; to make D.S. test 2,815 ft.

LOMA NOVA—DUVAL COUNTY

Al Buchanan and Blanco Oil Co.'s No. 2 J. O. Trevino (Ruiz), 330 ft. from S line, 660 ft. due W of No. 1, Sec. 73, J. Poitevent Sur.
Set csg. 2,693 ft.
Al Buchanan and Blanco Oil Co.'s No. 3 J. O. Trevino (Ruiz), 660 ft. due N of No. 1, 330 ft. from E line, Sec. 73, J. Poitevent Sur.
Spudded.
Claud Hamill's No. 1 Ruiz, 330 ft. from S and E lines of N 326 acres, Sur. 41.
Abd. 2,905 ft.
Humble O. & R. Co.'s No. 3 Ruiz, 330 ft. from W line, 2,735 ft. from S line of 640-ac. tract.
T.D. 2,799 ft.; 13 bbls. per hr.
Humble O. & R. Co.'s No. 4 G. Ruiz Est., 330 ft. from W line, 1,497 ft. from S line, Sec. 553, B.S.&F. Sur.
Rigging up.

NORTH KOHLER—DUVAL COUNTY

G. G. Mortiner's No. 2-B Peters, 2,310 ft. from W line, 330 ft. from N line of SW¼ of Sur. 196.
Tested wtr. 2,555 ft.

DARST CREEK—GUADALUPE COUNTY

Grayburg Oil Co.'s No. 14 McKean, 700 ft. from No. 13, Cottle Sur.
Deepening to Edwards 1,854 ft.

LUCAS—LIVE OAK COUNTY

Houston Oil Co.'s No. 32 Cartwright, 1,124 ft. N of No. 31, Trudo Sur.
Spudded.

SAM FORDYCE—HIDALGO COUNTY

Cortez Oil Co.'s No. 1-B Smith, 133 ft. from N line, 164 ft. from W line of S 99 acres of Tract B-3, Porcion 41.
S.D. 2,768 ft.
Gem Oil Co.'s No. 1-B (2) Seabury, 330 ft. from S line, 230 ft. from W line, Tract 256, Porcion 38.
T.D. 2,807 ft.; I.P. 75 bbls. per day; ¼-in. choke.
Barnett et al's (Roy Johnson) No. 1 Missouri Pacific Ry., S edge of right of way, 500 ft. from W line of Porcion 41.
Set csg. at 2,752 ft.
Newman et al's (Moran Corp.) No. 1 Guerra, 130 ft. from S and 330 ft. from W line of 7.5-ac. tract, in Tract 254, Por. 40.
T.D. 2,791 ft.; I.P. 15 bbls. per day; 15 lbs. tubing pressure; 50 lbs. csg. pressure.
Reed et al's No. 2 Smith, 133 ft. from N line, 165 ft. from E line of S 10 acres of B-3, Porcion 41.
S.D. 2,794 ft.; to perforate.
Rogers Oil & Gas Co.'s No. 4 Guerra, SE 25-ac. tract, Tract 254, Porcion 40.
Drlg. 1,700 ft.
Showers & Moncrief, Inc.'s No. 2 C. E. Smith, 230 ft. from N line, 164.2 ft. from E line of Share 3-B, Porcion 41.
Spudded.
Skelly Oil Co.'s No. 1-A Seabury, 198 ft. from E line, 230 ft. from S line of 12-ac. tract, Tract 256, Porcion 38.
Location.
Skelly Oil Co.'s No. 2 Seabury, 230 ft. from S and W lines of 24- ac. tract, Tract 256, Porcion 38.
C.O. 2,808 ft.
Smith & Dayvault's No. 1 Seabury, 100 ft. from N line, 150 ft. from E line of 22.90-ac. tract, Tract 256, Porcion 38.
T.D. 2,915 ft.; perforated at 2,844-56 ft.; tested oil and S.W.; P.B. to 2,790 ft.
Waite's (Scheafer & Mundy) No. 1 Tobasco, Ind. Dist., 25 ft. from N line, 210 ft. from E line of Tract 260, Porcion 38.
W.O.C. 2,770 ft.; no report.

SANDIA—JIM WELLS COUNTY

Magnolia Pet. Co.'s No. 6 Seeligson, 660 ft. W, 330 ft. S of No. 3, Canales Sur. No. 20.
Drlg. 4,500 ft.; gas sand 4,400 ft.
O. W. Killam's No. 5 W. D. Wade ranch, 1,285 ft. from S line, 1,640 ft. from E line, 1,250 ft. SE of No. 4, in 1,000-ac. tract, Blk. D, Lopez de Jean grant.
Drlg. 3,811 ft.

BURNEL—KARNES COUNTY

American Liberty Oil Co.'s No. 1 C. H. Walfmuller, 330 ft. from S and W lines of 207-ac. tract, Jas. Johnson Sur.
Location.
Luling O. & G. Co.'s No. 1 W. C. Boyce, 150 ft. from NW cor. of tract, J. Johnson Sur.
Spudded.

KINGSVILLE—KLEBERG COUNTY

Ray Clark's No. 1 House, Lot 5, Blk. 37, K.T.&I. Co. Sur.
No report.
Fidelity Exploration Synd.'s No. 1 Vivian Kivlin, Sec. 4, Blk. 39, K.T.&I. Sur. on Vivian Kivlin lease.
Derrick up.

JACOB POOL—McMULLEN COUNTY

Loma Oil Co.'s No. 36-A Jacob, 330 ft. N of No. 30, 160 ft. from E line of 640 acres, W. H. Jacob Sur. No. 8.
T.D. 978 ft.; completed an average well.
Motes & Beddingfield's No. 4 Jacobs (Lark), 418 ft. from S and W lines of lease, Scrugham Sur.
Drlg. plugs 982 ft.
Motes & Beddingfield's No. 6 Lark, 304 ft. S of No. 3, Scrugham Sur.
Cmtd. csg. and W.O.C. 985 ft.

SINTON—SAN PATRICIO COUNTY

Conroe Drlg. Co.'s (Heep) No. 1-C R. H. Welder, 466 ft. from S and W lines of 100-ac. tract, Juan Francisco Encornacion & Felipe, R. Portilla grant.
Bldg. derrick.
Humble O. & R. Co.'s No. 1-B Welder, 2,400 ft. from N and E lines of 300-ac. lease.
Dry and abd. at 7,131 ft.

ANGELITA—SAN PATRICIO COUNTY

Plymouth Oil Co.'s No. 3-A Welder, 2,500 ft. SW of No. 2-A, J. F. Portillo Sur.
T.D. 5,437 ft.; I.P. 150 bbls. per day on gas jet; 1,400 lbs. tubing pressure; 1,000 lbs. csg. pressure.

LOS OLMOS—STARR COUNTY

H. L. Curry's No. 1 Bass, 335 ft. E line, 2,522 ft. N line of Sur. 3, Por. 75-76-77.
Abd. 1,710 ft.
Ed Linberg's No. 6 Bass, 1,350 ft. from W line, 150 ft. from N line of S½ of NW¼ of Share 6, Porcion 75.
Drlg. 245 ft.

BARBACOAS—STARR COUNTY

R. G. Hall's No. 1 Doyno et al, 150 ft. from N line near center of Blk. C-31, Tract 21, Porcion 41.
Coring 1,346 ft.
Merren Bond et al's No. 4 S.C.C.C. 330 ft. from N and E lines of S 20 acres of Blk. 24, of the Jeffries Lambeth Subd., Por. 89.
T.D. 4,212 ft.; P.B. and completed at 2,708 ft. for 20,000,000 ft. of gas.

PLACETAS—STARR COUNTY

Hughston Oil Co., Inc.'s No. 1 Ben D. Wood, 701.6 ft. from S line, 162 ft. from W line of 1,000-ac. tract, Porcion 84.
Rigging up.

RIO GRANDE CITY—STARR COUNTY

Sioux Oil Co.'s No. 6 Goodrich, 150 ft. from S and W lines, Blk. 13, Tract 5, Por. 81.
T.D. 1,364 ft.; I.P. 100 bbls. per day on pump.

SAXET—NUECES COUNTY

J. K. Cutton's No. 3 Sagarin, 330 ft. from S and E lines of tract, Form Lot No. 5, C.E.P.I.&M. Sur.
Coring 4,600 ft.
Magnolia Pet. Co.'s No. 2 W. W. Walton, 330 ft. from E line, 289 ft. from S line of 92.11-ac. tract, Enrique Villareal Sur.
Location.
Texon Oil & Royalty Co.'s No. 1 Buckholts, (Kocurek), 600 ft. from S line, 695 ft. from N line of J. Ward Sur.
Tested 34 fourbles of oil; 50 lbs. in 14 min.; set csg.

KIMBRO—TRAVIS COUNTY

J. M. Hickey's No. 1 Altick Lind, 150 ft. from S line, 820 ft. from E line of 41.05-ac. tract in McHenry Windburn Sur.
Location.

BRUNI-WEBB COUNTY

Associated Oil Co.'s No. 3 A. M. Bruni, 660 ft. N of No. 2, 330 ft. from W line, 5,000-ac. tract, Blk. 7, M. Arispe grant.
Spudded.
Associated Oil Co.'s No. 4 A. M. Bruni, 330 ft. from NW line, 660 ft. SW of No. 3, Blk. 7, M. Arispe grant.
Location.
American Liberty Oil Co.'s No. 16-A Bruni, 330 ft. from SW line, 1,302 ft. from SE line, Sur. 6, Arispe grant.
T.D. 3,429 ft.; I.P. 18 bbls. per hr.; ¼-in. choke.
Highland Oil Co.'s No. 7 Bruni, 990 ft. from NW line, 330 ft. from NE line, Sur. 7.
Drlg. 3,109 ft.
Highland Oil Co.'s No. 12 A. M. Bruni Estate, 520 ft. E of No. 6, 330 ft. from S line of 200-ac. tract, M. Arispe grant.
Spudded.
O. W. Killam's No. 32 Bruni, 260 ft. from SE line, 418 ft. from NE line of Blk. 28, Sur. 8.
Gas sand 3,418-25 ft.; standing 3,449 ft.
O. W. Killam's No. 35 Bruni, 915 ft. from SW line, 330 ft. from SE line, Sur. 6.
Drlg. 2,500 ft.
Peerless & Seeligson's No. 3 Bruni, 330 ft. SE line, 250 ft. SW line, Sur. 6.
Coring for sand.

LAUREL—WEBB COUNTY

South Texas Oil Co.'s No. 1 Laurel Bros., 100 ft. from E line, 200 ft. from S line of Sec. 269, Blk. 2, C.C.S.D.&R.G.N.G. Sur.
Spudded.
J. Elmer Thomas' No. 5 Gates, 990 ft. N and E lines, Sur. 22.
Drlg. 400 ft.

WEST COLE POOL—WEBB COUNTY

Ross Barnhart's No. 1 de la Garza, 1,500 ft. from N line, 200 ft. from E line of Sur. 262.
T.D. 2,406 ft.; rebuilding derrick.
Carolina Texas O. & G. Trust, Inc.'s No. 11 S. Benavides, 150 ft. from S line, 600 ft. from W line, Blk. 12, Sur. 683.
Set csg. on sand showing oil, 4,993 ft.
Cole Pet. Co.'s No. 92 Benavides, 330 ft. from N and E of E cor. of Callaghan Tract on Sur. 6.
T.D. 3,398 ft.; P.B. 2,300 ft.; W.O.C.
French Oil Corp.'s No. 2-B Benavides, 150 ft. S and W lines of SE¼ of SE¼ of Sur. 661.
Drlg. 1,800 ft.
Magnolia Pet. Co.'s No. 3, Mag. Benavides, 200 ft. from N and E lines of Sur. 697.
T.D. 2,336 ft.; I.P. 40 bbls. per day on pump.
Magnolia Pet. Co.'s No. 8-S Benavides, 330 ft. from SW and NW lines of Blk. 7, O'Hern-Seacord Subd.
T.D. 2,824 ft.; I.P. 25 bbls. per day.
J. E. Thomas' No. 7 Gates, 910 ft. from N line, 225 ft. from E line, Sur. No. 62.
Abd. 768 ft.
Tide Water Oil Co.'s No. 3 Bruni, 990 ft. from SW line, 330 ft. from NW line of 500-ac. tract, Sur. 7.
W.O.C. 3,400 ft.

NOACK—WILLIAMSON COUNTY

Coffield & Lanning's No. 3 Heap, 200 ft. from N line, 225 ft. from W line of tract in White Sur.
Location.
R. R. Ogden's No. 1 Matteck, 150 ft. N and W lines of 108.5-ac. tract in White Sur.
Location.
Taylor Ref. Co.'s No. 3-B Sladek, 1,500 ft. N of creek, 300 ft. from W of No. 1-B, White Sur.
696 ft.; no report.

ESCOBAS—ZAPATA COUNTY

Kleiner & Hill's No. 11 Guttierez, 600 ft. from NE line, 2,087 ft. from NW line, Fansler Subd., Sur. 4, Comitas grant.
Drlg. 1,065 ft.

JENNINGS—ZAPATA COUNTY

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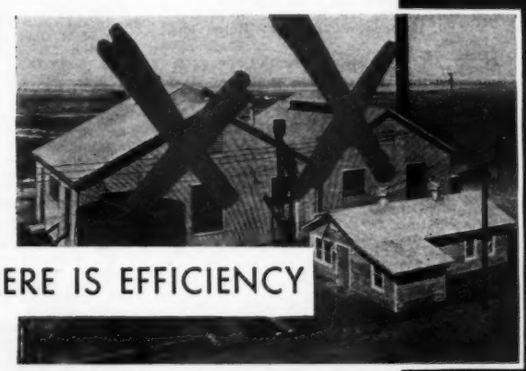

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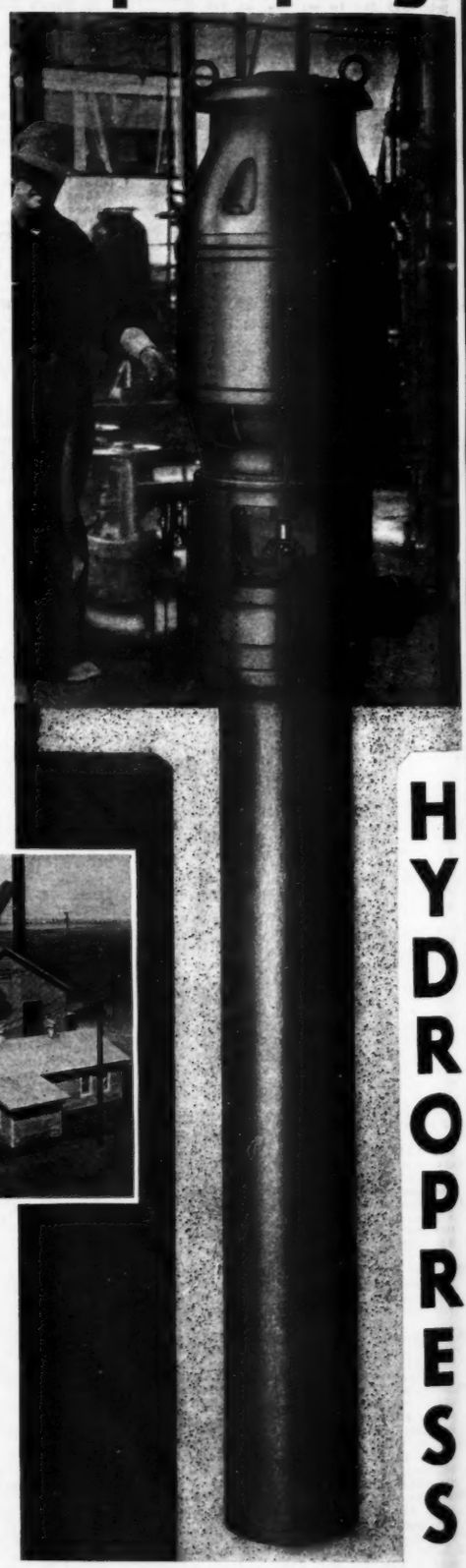


HYDROPRESS

BYRON JACKSON

CENTRIFUGAL PUMPS FOR EVERY SERVICE

Gasoline Industry Now Moving on to More Profitable Position

By W. T. ZIEGENHAIN

In the past year the natural gasoline industry witnessed the abandonment of a greater number of plants than were built and the total capacity of its operating units declined, two important facts which help to prove that this branch of oil business is consolidating its position in order to move on to more profitable ground. The haphazard erection of plants whenever and wherever crude oil happened to be found is a thing of the past. Also, one large plant is now built where several small ones would have been built under the system of a few years ago. The willingness on the part of producers to turn the gas from their wells over to an individual or a company to process through a single plant within a given area instead of each trying to process his own gas through a small unit has brought this about and it is a most progressive move. This unitization of manufacturing practices permits building much better plants from the standpoint of equipment and justify the inclusion of automatic devices, complete instrumentation and more exacting control so that the products of such plants are more uniform in quality and the operation may be made more responsive to market changes.

Survey and Personnel

The Oil and Gas Journal's 1935 survey of plants and personnel of natural gasoline companies operating in the United States appears in this issue starting on page 68.

East Texas Field

In the past year the East Texas Field held the greatest of interest for companies desiring to expand production through new plants. The more orderly control of oil and gas production within the field made plant operation easier and the large number of unconnected wells made it possible for a number of plants to be built, even though the volume of gas produced per well in that field is relatively small. The largest plant to be completed in the past year in this field was that of the Hanlon Gasoline Corp. of Texas. This plant is capable of producing 30,000 gallons of 18 pound natural daily and takes gas from about 1,400 wells. In the same field the Sinclair Refining Co. made additions to its plant so that it is also capable of producing an average of 30,000 gallons per day. Another large plant to be built in this field this year is that of the Sabine Valley Gasoline Co., Inc. The plant is nearing completion and some gas is being processed at the present time. Insulation and other finishing touches will be supplied within the next two weeks and the plant is expected to be under full operation at the end of that time. Other important plants completed in the East Texas area within the past year include those of the Lisbon Gasoline Co. having a capacity of 12,000 gallons daily, Gilliland Refining Co. of 8,000 gallons capacity and a smaller plant built by the Nine Oaks Gasoline Corp.

Panhandle Plant

While more new total plant capacity and production developed in the East Texas area than in any other area during 1934, the largest single unit was built in the Panhandle Field of Texas. The unit referred to is that built by the American Natural Gasoline Co. and was designed to process 125,000,000 feet of gas daily. Its gasoline production exceeds that of any other plant built in the past year.

Oklahoma Developments

Oklahoma showed more than the usual amount of new plant activities also and this is accounted for through the discovery of several important new oil pools. At the present time a 25,000 gallon combination compression and absorption

(Continued on Page 54)

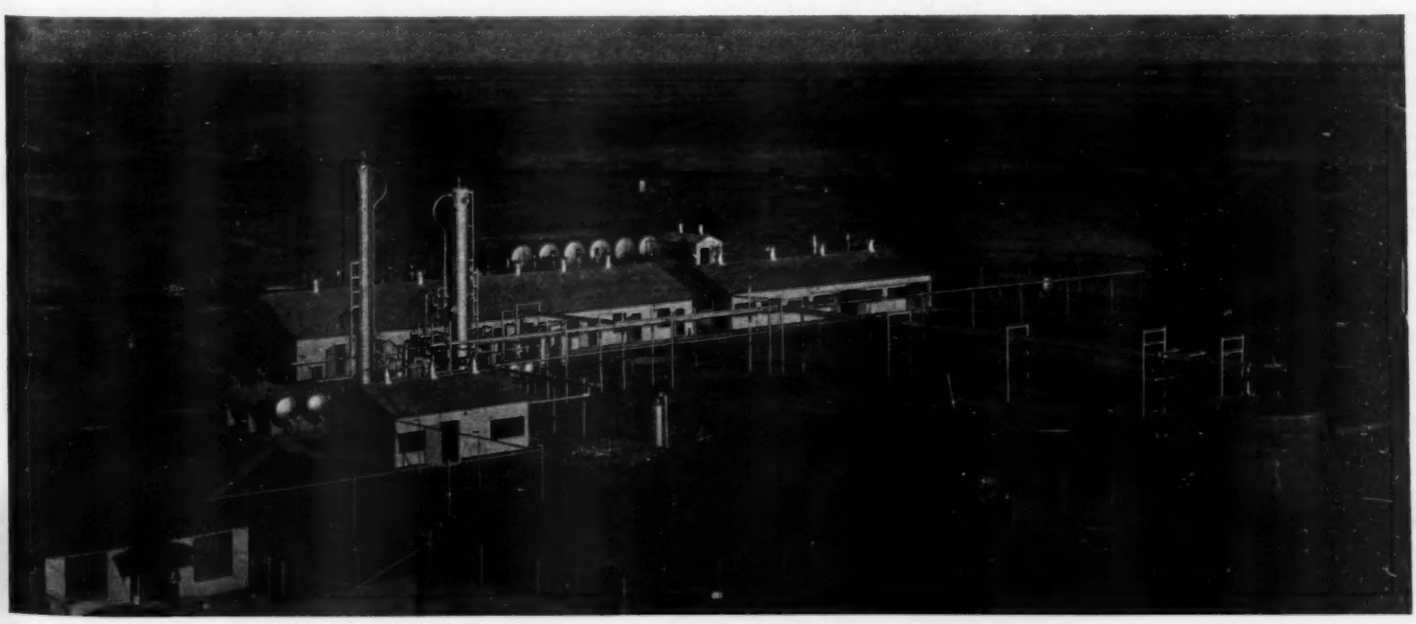
Natural Gasoline Industry

	No. of plants	Daily capacity (gallons)
May 1, 1935	850	9,909,797
May 1, 1934	882	10,241,989
May 1, 1933	919	10,308,354
May 1, 1932	948	10,536,182
May 1, 1931	987	10,531,511
May 1, 1930	1,071	9,541,320
May 1, 1929	1,124	8,695,727
May 1, 1928	1,229	7,865,652
May 1, 1927	1,148	6,947,264
May 1, 1926	1,063	5,121,000
May 1, 1925	1,143	4,642,561
May 1, 1924	1,012	3,396,961

Plant Capacities by States

	Status of plants May 1 — No. of plants		Daily capacity (gals.)	
	1935	1934	1935	1934
Arkansas	10	9	93,250	72,450
California	126	138	3,417,555	3,676,730
Colorado	2	3	12,000	13,000
Illinois	59	62	42,901	45,688
Kansas	23	24	211,200	229,200
Kentucky	6	6	39,900	39,900
Louisiana	41	45	368,100	417,130
Michigan	1	...	4,000	.....
Montana	1	1	9,000	5,000
New Mexico	2	2	70,000	64,000
New York	2	2	900	900
Ohio	20	20	63,071	175,071
Oklahoma	194	202	2,263,516	2,247,916
Pennsylvania	128	126	126,898	126,329
Texas	129	136	2,597,400	2,537,900
West Virginia	94	96	383,936	390,815
Wyoming	12	10	206,160	199,960
Total	850	882	9,909,797	10,241,989

Note—May 1, 1934, includes 112 plants with 961,238 gallons daily capacity listed as shut down. May 1, 1935, includes 91 plants with 679,830 gallons daily capacity listed as shut down.



One of the natural gasoline plants built in the past year. Some of them were larger and some of them smaller but all of them included improvements in design and operation to reflect permanency

Natural Gasoline Plant Maintains Consistent Operations in East Texas

By GEORGE WEBER

Intermediate cooling of the absorption oil and scientific solution of unusual field difficulties are the outstanding features of operation at the East Texas plant of the Hanlon Gasoline Corp. of Texas, a subsidiary of Hanlon-Buchanan, Inc. The plant which is one of the largest in the field, is located on the J. F. Bowles Survey 4 miles northeast of Gladewater. The plant serves more than 1,400 wells, processing approximately 13,000,000 feet of gas daily by compression and absorption. Average output is 30,000 gallons daily. A peak production of 47,000 gallons per day of 28-pound product was once reached.

The magnitude of the project, together with the irregularity of gas production, combine to make the gathering system at this plant a creditable engineering accomplishment. In the field the wells are divided into 165 batteries. These in turn are connected into eight main gathering lines. The pressure at the plant was arbitrarily assumed at 10 inches of vacuum. Then on the basis of the production and location of the wells, the lines were calculated so as to provide atmospheric pressure at the wells. These computations were made to include a safety factor of 50 per cent allowing for irregularities in gas flow. Further, a schedule of production of each well was worked out to facilitate a uniform flow of gas at all times. As a result, the flow is distributed equally day and night. In the face of the usual conditions in East Texas production, this system is the principal factor in the successful operation of the plant.

Gasoline Content

In all, the system contains 70 miles of gathering lines and 50 miles of residue lines, ranging from 20 inches down to 4 inches. The gasoline content of the gas varies between 1.5 and 4 gallons per M.C.F., depending on the temperature and pressure conditions at the wells. Seasonal changes in temperature have a marked effect on the content. Average summer content of the gas is 3.5 gallons per M.C.F. In winter the content drops to 2.7 gallons per M.C.F. Most of the wells are flowed for a period of less than two hours daily. Some produce their allowable in 20 minutes. These varying production conditions constitute another sizeable factor in the gasoline content of the gas. The following is an analysis of the gas processed:

Fraction—	Volume per cent
CH_4	44.36
C_2H_6	9.71
C_3H_8	23.79
$i\text{-}C_4H_{10}$	4.97
$n\text{-}C_4H_{10}$	10 38
C_5H_{12}	4.8
C_6H_{14}	1.99

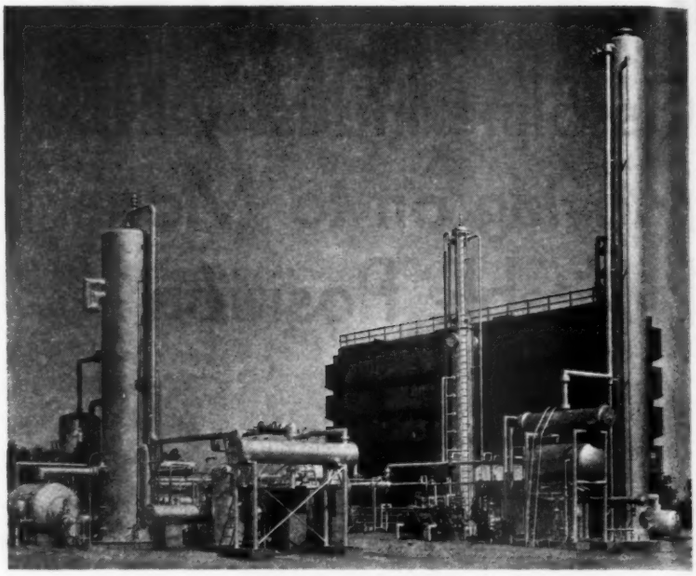
This gas will yield about 3.96 gallons of stabilized 26-pound gasoline per 1,000 feet. It is an unusually high content gas and is not representative of the usual summer grade.

Meters at the field batteries are of the seven-day type and 24-hour master meters are installed at the plant. They check from 1½ to 3 per cent.

Compression Step

The eight lines entering the plant discharge into four large scrubbers to knock out any oil carried in with the gas. These in turn discharge into a header at eight points so arranged as to maintain a constant pressure through its length. This header feeds 14 compressors including eight 115-horsepower Clark single compressors, three Laidlaw compressors powered by 165-horsepower Bessemer engines, two 160-horsepower Cooper compressors and one Type 10 Twin Bessemer. In addition to this bank are two 165-horsepower auxiliary engines, a 60-horsepower air compressor and an 80-horsepower recompressor.

Actual pressures on the gas fed to the compressors vary from a minimum of 10 inches to a maximum of 1½ inches of vacuum. The gas is compressed to 45-50 pounds and discharged into a scrubber and accumulator to remove oil from the compressors, and any gasoline extracted by the compression. At present the latter is negligible, but as the field grows older an increase is anticipated. From the absorber the lean gas is fed to the residue lines at 36-38 pounds pressure. It reaches the leases at about 30 pounds. Part of the gas goes to a flare line which is fitted with a control valve to limit the flow. Wet gas from the wells averages 1.22 specific gravity and residue gas 1.05.



Still and stabilizing equipment showing arrangement of exchangers and reboilers for finishing gasoline

In the absorption step, a method of oil cooling is employed which cut the required oil-gas ratio to half the usual figure. At two points along the tower the oil is blanked off, run through exterior coolers and returned to trays slightly below the respective blanked ones. At each cooler, temperature drop of 10° is attained. The lean oil enters the top of the absorber at approximately 80° and leaves as rich oil at 105° F. Actually the temperature rise throughout the process is 45° F., but the intermediate cooling of the oil results in a superficial rise of only 25° with the attendent increase in absorptive capacity.

The still, originally a 10-tray tower, was revamped by the plant engineers; the trays rearranged and augmented by five additional ones. The result is an exceptionally close fractionation, yielding a product with superior intermediate distillation characteristics. The rich oil enters the still at 360° F. and leaves as lean oil at 350° F., losing heat to reflux vapors. About .18 pound of process steam is used per gallon of oil circulated. The absorption medium is a kerosene with an initial of 330° F. and an endpoint of 550° F. Oil circulation of 238 gallons per minute can be maintained in the system. Due to efficiency of the still, the lean oil is entirely stripped of the gasoline fraction, leaving the tower with a vapor pressure of 0 mm. The oil level in the still reboiler is controlled with a mercoid switch connected with a pressure line to the storage tank.

From the still the oil passes through a heat exchanger to a surge tank, is pumped through a bank of cooling coils in the water cooling tower and is further cooled in a propane subcooler before re-entering the absorber.

Accurate pressure and temperature control on the stabilizer facilitate a wide range of products. The reflux is controlled by the volume of water circulated through the reflux condenser. Propane is bled off from the condenser and used in the absorption oil subcooler and the ice plant.

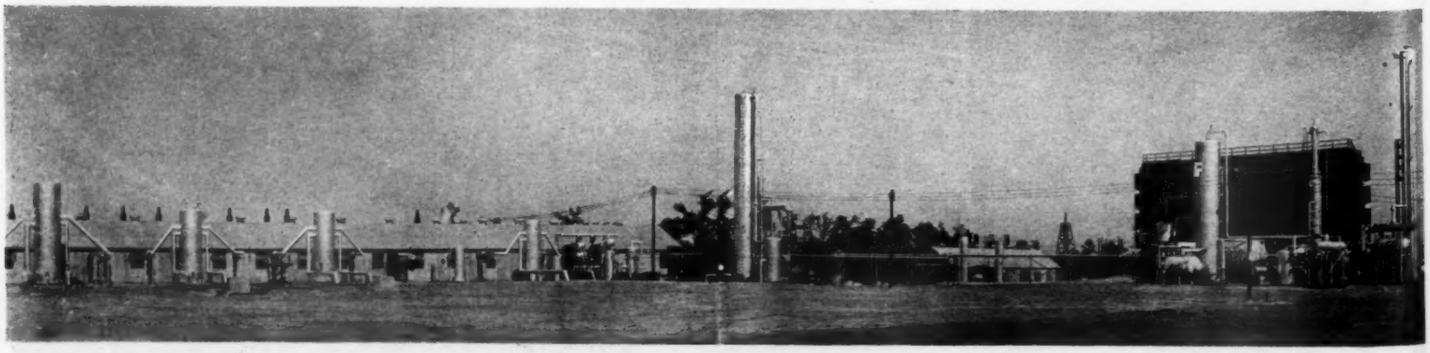
Safety Devices

Safety is stressed in this plant. For prevention of compressor blowouts due to oil in the feed lines, a safety device is attached to liquid level controllers, automatically cutting off the ignition on all compressors should the oil level rise too far in any one scrubber. This eliminates both blowout and fire hazards. In addition, a master switch is located well away from the building. Tests have shown that a man can reach it from the building and shut down all the compressors within 15 seconds.

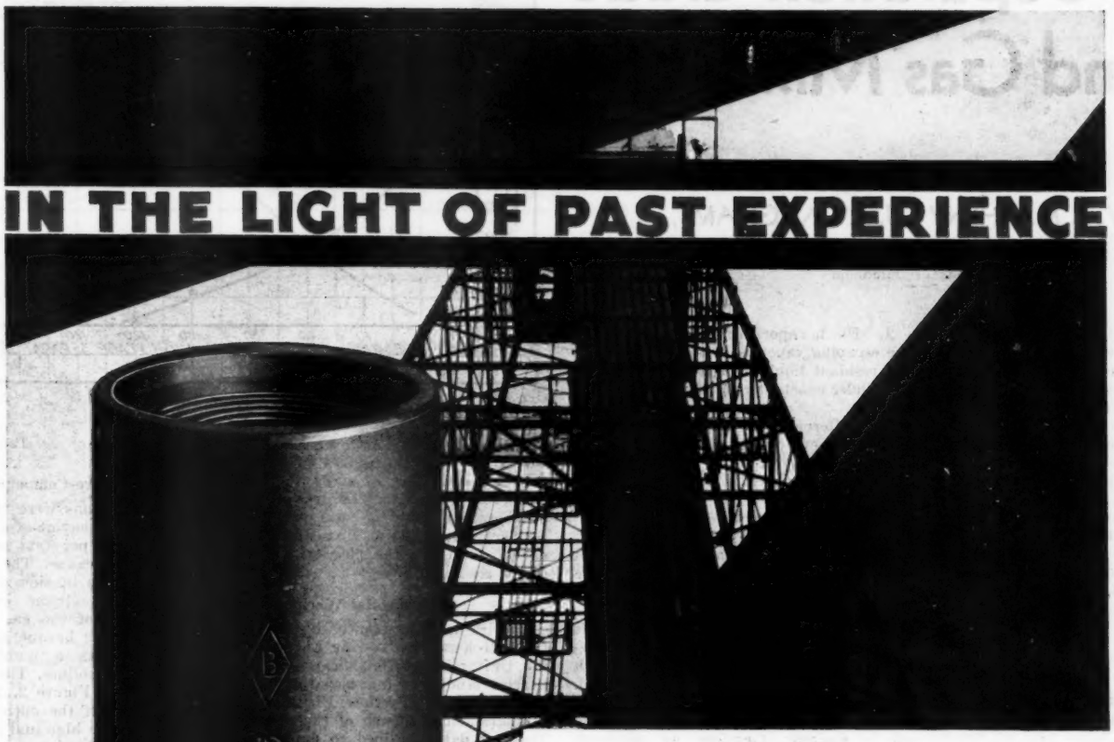
Water is supplied by two wells drilled on the site. It is run into the bottom of a large settling tank to remove suspended matter and from there is filtered through quartz. Part of the filtered water is pumped to a small supply tank mounted atop the settling tank for laboratory and domestic use.

The remainder of the plant includes six 75-horsepower steam boilers, a Fluor

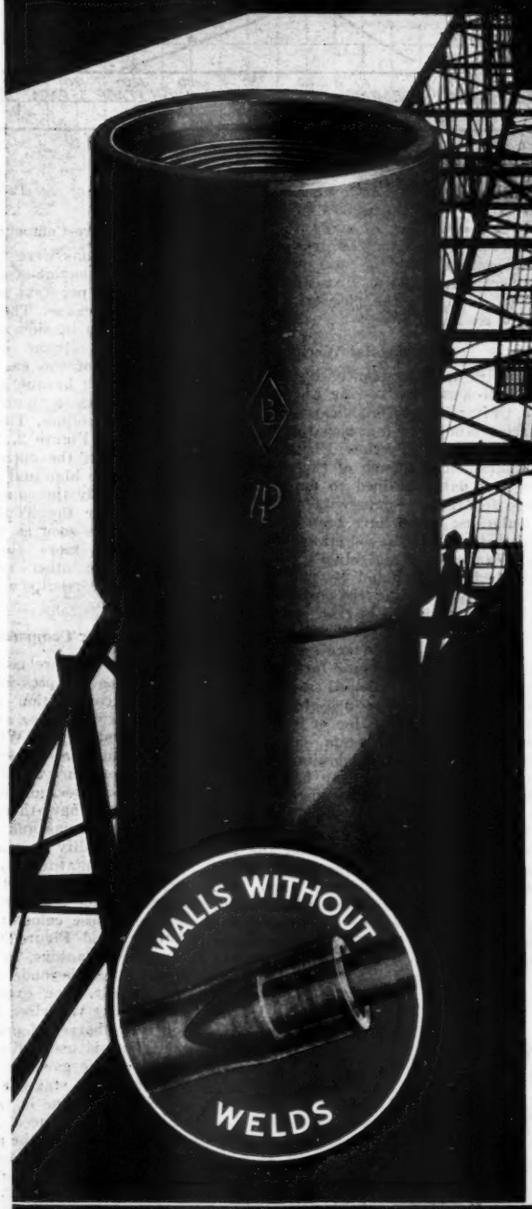
(Condition on Page 54)



Panorama of the 40,000-gallon plant of the Hanlon Gasoline Corp. of Texas, showing scrubbers and compressor building, absorber, distillation equipment, and stabilizer. The plant, located at Gladewater serves over 1,400 East Texas wells, maintaining even operating schedules by production control and efficient gathering of gas from the field



IN THE LIGHT OF PAST EXPERIENCE



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Stage Separation Crude Oil and Gas Mixtures

By W. F. MATHENY*, J. F. LANGHAM*, W. F. CLOUD and R. L. HUNTINGTON
University of Oklahoma

During the past 10 years, natural gasoline plants have processed a much higher percentage of gas from flowing wells than they did in the early life of the industry when practically all of the gas came from casingheads. This change has been brought about both by the development of various gas lift methods which have prolonged the flowing life of the wells, and through the conservation of gas in natural flowing wells. It was early recognized by the natural gasoline manufacturers that they could reduce their investment in gas gathering lines and compressor equipment by utilizing the higher back pressures which were available at the flowing wells. This step called for the separation of the crude oil from the gas under pressures above atmospheric. However, as these back pressures on the separators were increased it was found that considerable quantities of gasoline went into solution in the crude oil, a large part of which vaporized when the crude oil was run into atmospheric storage tanks. Contrary to the common belief, the crude oil produced by this method proved to be of higher A.P.I. gravity than the oil which was flowed directly from the well to the atmospheric storage tank. This discovery brought to the front the possibilities of separating gas from crude oil in several stages. The results which have been attained, especially in such fields as Kettleman Hills, where a high gravity crude is produced with relatively high gas-oil ratio, show for themselves, the benefits which both the oil producer and natural gasoline manufacturer can receive from installations of several separators hooked up in series.

Ben E. Lindsly[1] has given a good description of the different methods by which gas can be separated from a liquid. Briefly they are as follows:

1. Flash vaporization in which all of the escaping vapor is in equilibrium with the residual liquid in a steady flow system under constant temperature and pressure.

2. Differential vaporization in which the vapor evolved is removed from the residual liquid as rapidly as the vapor forms. Obviously this system would be of the batch type, and either the temperature or the pressure would vary during the vaporization period.

3. Differential flash vaporization, or stage separation, in which the vapor is removed from the liquid in several flashes at decreasing pressures.

In the distillation of crude oil it is advantageous to secure the maximum release of vapor from the crude, hence flash vaporization in one stage is employed. On the other hand, in the production of oil, the retention of gasoline in the crude oil is desired; therefore an approach toward differential liberation of the vapor is accomplished by stage separation. To gain a better picture of what is really taking place in the separation of the gas from the crude, one might consider the whole process as a tug of war between the fixed gases and the heavier fractions in the crude oil over the ownership of the gasoline. If the release of the pressure is gradual as in stage separation, the fixed gases are preferentially allowed to escape, and do not drag the gasoline fractions along with them.

Need for Applied Research

The usual cut and try method has been employed to a large extent, in the development of stage separation. In spite of the numerous variables which enter into such a problem, it is believed that the design of these systems for separating gas from oil can be placed on a more scientific basis than it is at present. Simplified methods[2, 4, 5] have been developed for estimating the percentage of vaporization of liquid fractions from true boiling point data; however, these methods do not lend themselves so readily to mixtures consisting of gases and liquids. The problem therefore resolves itself into a laboratory study of such variables as temperature, pressure, number of stages, gas-oil ratio and the physical properties of the gas and oil.

Experimental Work

Apparatus has recently been built in the Petroleum Engineering Laboratory at the University of Oklahoma for a quantitative study of stage separation under conditions of steady flow. Figure 1 shows a diagrammatic sketch of the apparatus. The few data obtained to date on two-stage separation compare favorably with calculations which have been made on a hypothetical mixture of ethane and normal hexane, based on solubility constants published by Katz and Brown.[3]

The first phase of the problem which is being investigated in this laboratory is that of determining the optimum ratio of pressures in a two-stage system which has atmospheric pressure for its second stage. Tonkawa crude oil saturated at 300 pounds per square inch absolute with dry natural gas consisting of 90 per cent methane and 10 per cent ethane, has been found to yield a minimum gas-oil ratio of 64 cubic feet per barrel when the pressure on the first stage is about 80 pounds per square inch absolute. When higher pressures were used on the first stage, the gas-oil ratio on the low stage built up faster than the gas-oil ratio decreased on the high stage, and as lower pressures were put on the first stage the reverse phenomena appeared, the total gas-oil ratio increasing above 64 cubic feet. The temperature was held constant at 120° F. during these runs.

Two-Component System

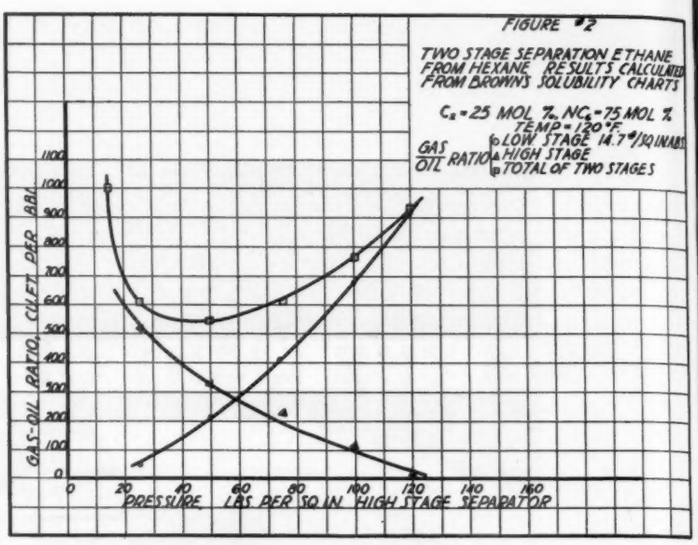
Calculations were then made to determine the behavior of a mixture consisting of 25 mol per cent ethane and 75 mol per cent hexane. These two components were chosen in view of the fact that the density of ethane compared favorably with that of the gas released from the crude, while hexane has about the same volatility as a number of commercial summer gasolines. The results have been plotted on Figure 2. It is interesting to observe that the optimum pressure ratio between the high and low pressure stages is practically the same as the early data indicate for the Tonkawa crude oil-gas mixture. As soon as the laboratory data have been more thoroughly rechecked and certain other variables have been studied, the results will be presented for publication.

Four-Component Mixture

In any mixture consisting of two hydrocarbons the pressure and temperature fix the composition of the mixture so long as two phases are present such as liquid and vapor. When three or more components are present in a two-phase system, pressure and temperature do not fix the composition of each component. Calculations have therefore been made on a mixture of gas and high gravity crude oil. To simplify the calculations this hypothetical mixture was reduced to four key components—methane, normal butane, gasoline and kerosene plus. The results of these calculations are shown in Table 1 and Figure 3. It is easily seen that the advantage, to be gained by additional stages beyond two separators, falls off rapidly. For example 7 gallons of gasoline are vaporized into the gas stream for every barrel of crude produced when one stage is used. When two stages are employed the gasoline drops to 1 gallon, and for three stages about one-half of a gallon of gasoline is vaporized per barrel of crude oil produced. A curve similar in shape is found for the gas-oil ratios which decrease with an increasing number of stages. The gravity of the crude oil increases from 49 to 52.5 A.P.I. when going from one-stage to two-stage separation while the increase is only from 52.5 to 54 A.P.I. when the stages are increased to three in number.

Entrainment in Separators

In the separation of gas from crude oil, there is another major factor to consider other than that of equilibrium between the gas and the oil, namely entrainment, or the mechanical carrying of liquid droplets into the gas stream leaving the separator. Stage separation goes a long way in solving this difficulty, since crude oil has a tendency to foam under reduced pressures. By releasing the



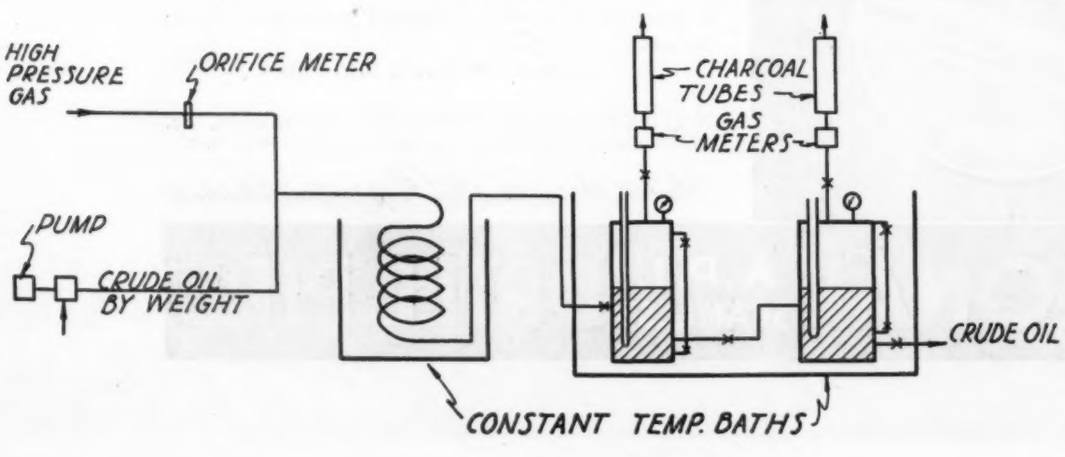


Fig. 1—Diagrammatic sketch of laboratory flow system for study of stage separation of oil and gas

*Students in Petroleum Engineering School, University of Oklahoma.

Presented at annual convention of Natural Gasoline Association of America.

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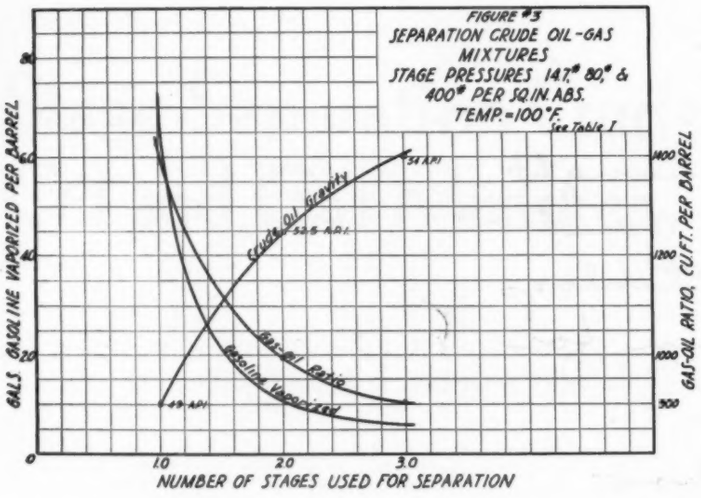

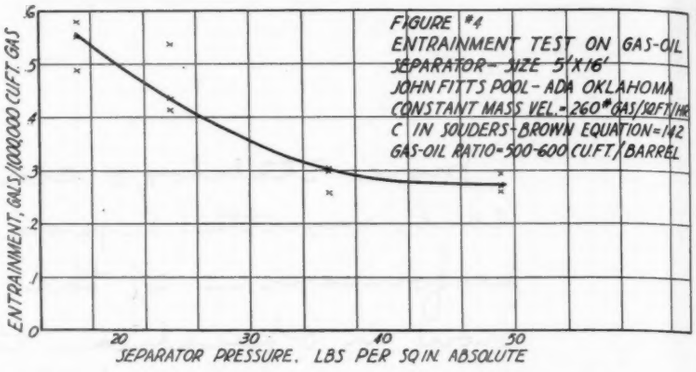
FIGURE #4
ENTRAINMENT TEST ON GAS-OIL SEPARATOR - SIZE 5'X16'
JOHN FITTS POOL - ADA OKLAHOMA
CONSTANT MASS VEL.=260# GAS/SQ.FT./HR.
C IN SOUDERS-BROWN EQUATION=142
GAS-OIL RATIO-500-600 CU.FT./BARREL
ENTRAINMENT, GALS./1000000 CU.FT. GAS
SEPARATOR PRESSURE, LBS. PER SQ.IN. ABSOLUTE

greater part of the gas at the higher pressures, the entrainment is reduced in the low pressure separators. The entrainment of crude oil into the gas line represents not only a loss to the oil producer, but creates a nuisance for the natural gasoline manufacturer, who must drain it from his gas lines. Crude oil mists often carry great distances through pipe lines into the gasoline plants, where the crude contaminates the absorption oil, and in turn the absorption oil must be reconditioned by distillation in a small steam still.

Very little data are available to show the amount of entrainment from separators. Figure 4 shows the results of tests made in the John Fitts Pool near Ada, Okla. The crude oil mist was extracted under pressure from the gas stream by a small glass wool scrubber, and the increase in weight represented the entrainment. It is seen that decreasing pressures cause a rapid rise in entrainment due probably to the increasing linear velocity and the greater tendency for the crude to foam as the heavier natural gasoline fractions start to come out of solution.

Nomenclature

Y_v = Mol fraction of any component in the vapor.

X_l = Mol fraction of any component in the liquid.

$K = \frac{Y_v}{X_l}$ = Katz-Brown solubility constant.

V = Mol fraction vaporized.

$1 - V$ = Mol fraction liquefied.

X_f = Mol fraction of any component in the feed.

C_1 = Methane.

NC_4 = Normal butane.

On the basis of 1 mol of feed, a material balance around a separator may be expressed as follows for any one component:

$$1(X_f) = V(Y_v) + (1 - V)X_l$$

Since $Y_v = K X_l$

$$1(X_f) = V(K X_l) + (1 - V)X_l$$
$$= X_l[1 + V(K - 1)]$$

Conclusions

Stage separation of crude oil-gas mixtures offers certain advantages and economies to both the oil producer and the natural gasoline manufacturer. For the oil producer:

1. High back pressures prolong the natural flowing periods through a reduction in gas-oil ratios.

2. The A.P.I. gravity of the crude oil can be increased. Under certain conditions when long storage periods are necessary in open tanks, this gain may be greatly offset by evaporation losses.

3. Less oil is lost into the gas lines through entrainment.

For the natural gasoline manufacturer:

1. The gas can be handled through smaller lines and the investment in compressor equipment can be postponed.

2. Less crude oil mist is carried into the plants, to contaminate the absorption oil.

Quantitative data which are now being taken in the Petroleum Engineering Laboratory, will provide a basis for more intelligent design of stage separation systems. If any of the companies can contribute actual field data, the correlation of such data with laboratory results would would do much toward the solution of the problem.

Acknowledgement

The authors wish to express their appreciation for the assistance given by several students in the Petroleum Engineering School in building the equipment and obtaining data. The American Tank & Equipment Co. was kind enough to furnish the entrainment data from gas-oil separators in the Fitts Pool.

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TABLE 1—SUMMARY OF CALCULATED RESULTS ON STAGE SEPARATION OF CRUDE OIL-GAS MIXTURE TEMPERATURE = 100° F.

Physical Properties of the Crude Oil-Gas Mixture

Feed component	Mol fraction	Mol weight	Sp. gr. of liquid 60° F.	K = y/x at 100° F. 14.7-lb.	K = y/x at 100° F. 80-lb.	K = y/x at 100° F. 400-lb.	Cubic feet liquid at 60° F. per lb. mol
C	.50	16	.430	200	40.5	11.50	.587
NC	.10	58	.581	3.25	.68	.23	1.595
Gasoline	.20	110	.738	.30	.055	.02	2.38
Kerosene	.20	180	.800	.01	.0018	.0009	3.59

	Pressure lbs./sq. in./abs.	A.P.I. gravity of crude oil from final separator	Gas-oil ratio cu. ft./bbl. of residual crude oil	Gals. gasoline vaporized per bbl. of residual crude oil	Molal composition of residual crude	x_l	
Single flash	14.7	49.0°	1,426	7.33	C_1	.0037	
					NC_4	.0408	
					Gasoline	.3770	
					Kerosene	.5785	
						1.0000	
Two-stage:							
First stage	80	....	953	.937	C_1	.0020	
Second stage	14.7	52.5°	38	.050	NC_4	.1090	
					Gasoline	.4250	
					Kerosene	.4640	
			991	.987		1.0000	
Two-stage:							
First stage	400	....	828	.284	C_1	.0025	
Second stage	14.7	53.0°	143	.820	NC_4	.1167	
					Gasoline	.4230	
					Kerosene	.4578	
			971	1.104		1.0000	
Three-stage:							
First stage	400	....	804	.2740	C_1	.0020	
Second stage	80	....	60.8	.0612	NC_4	.1445	
Third stage	14.7	54.0°	40.4	.2310	Gasoline	.4170	
					Kerosene	.4365	
				.5662		1.0000	

Three-Stage Separation, 400, 80 and 14.7 Pounds Per Square Inch Absolute, Respectively at 100° F.

First Stage, 400 Pounds, 100° F. First Trial, V = .48

	X_f	K	K—1	V(K—1)	1 + V(K—1)	X_l	Y_v
C_1	.5	11.50	10.50	5.04	6.04	.0828	.9530
C_4	.1	.23	—.77	—.37	.63	.1588	.0367
Gasoline	.2	.02	—.98	—.47	.53	.3770	.0075
Kerosene+	.2	.0009	—.9991	—.4792	.5208	.3840	.0003
						1.0026	.9975

Second Stage, 80 Pounds, 100° F.

				First trial V = .10			Second trial V = .07			
	X_f	K	K—1	V(K—1)	1 + V(K—1)	X_l	V(K—1)	1 + V(K—1)	X_l	Y_v
C_1	.0828	40.5	39.5	3.95	4.95	.0167	2.7650	3.7650	.0220	.8920
C_4	.1588	.68	—.32	—.032	.968	.1640	—.0224	.9776	.1625	.1105
Gasoline	.3760	.055	—.945	—.0945	.9155	.4110	—.0662	.9338	.4025	.0220
Kerosene+	.3824	.0018	—.998	—.0998	.9002	.4250	—.0699	.9301	.4120	.0007
						1.0167			.9990	1.0252

Third Stage, 14 7 Pounds, 100° F. First Trial V = .05

	X_f	K	K—1	V(K—1)	1 + V(K—1)	X_l	Y_v
C_1	.0220	200	199	9.95	10.9500	.0020	.4000
C_4	.1625	325	2.25	.1125	1.1250	.1445	.4700
Gasoline	.4025	.3	—.70	—.0350	.965	.4170	.1250
Kerosene+	.4130	.01	—.99	—.0495	.9505	.4340	.0043
						.9975	.9993

Gasoline Industry Moving to Profitable Position

(Continued from Page 49)

plant is under construction for the J. E. Crosbie-Warren Petroleum Co. interests in the Fitts pool. New plants were fairly recently completed in the South Osage pool for the Skelly Oil Co. and the Phillips Petroleum Co., both of which stand to be increased in capacity as the area is developed and proration limitations liberalized.

In California the principal new construction work was centered in the Lomita Gasoline Co.'s plant in the Mountain View Field where equipment was assembled to process 10,000,000 feet of gas daily.

In North Texas the principle new construction was that undertaken by the Texas Co. in building a 10,000 gallon plant in Foard County. Further west the Shamrock Oil & Gas Co. enlarged its two plants in the Panhandle, making an expenditure for new facilities totalling in excess of $200,000.

The past year was also marked by the entrance of gasoline plants into two new territories. One of these was the Louisiana Gulf Coast where the Shell Petroleum Corp. built a 15,000,000 foot gasoline plant in the Iowa Field and the other was the erection of a 5,000 gallon compression-absorption unit in the Chippewa-Greedale Field of Michigan by the Apex Gasoline Co. There had been one or two charcoal plants operated in the Michigan Fields but had been closed down by the time the Apex plant was built.

Changes in Capacity

In summarizing the data shown in the accompaning table attention is drawn to the decline in the number of plants since the peak in 1928 from 1,229 units in that year to 850 units at present. There was not a corresponding decrease in total plant capacity and the data also reveals that fewer plants are idle now than a year ago. Much of the equipment that was usable in these idle plants has been utilized in plants that were enlarged and built during the past year and this fact is further evidence that the natural gasoline industry is weeding out the dead wood and improving its position to return to a profitable basis of operation.

Natural Gasoline Plant Operations in East Texas

(Continued from Page 50)

cooling tower, an office building, a laboratory and storehouse.

Quality of Product

The quality of gasoline produced is typical of East Texas natural in that it has a very high pentane ratio consequently a percentage evaporated at 140° F. considerably in excess of the average product. For instance, 18 pound vapor pressure gasoline averages 82 per cent evaporated at 140° F. with distillation recovery of 98 per cent and an octane number of 78.

The production is moved by Hanlon-Buchanan, Inc. to their marine terminals at Houston and Goodhope for their export and coastwise trade.

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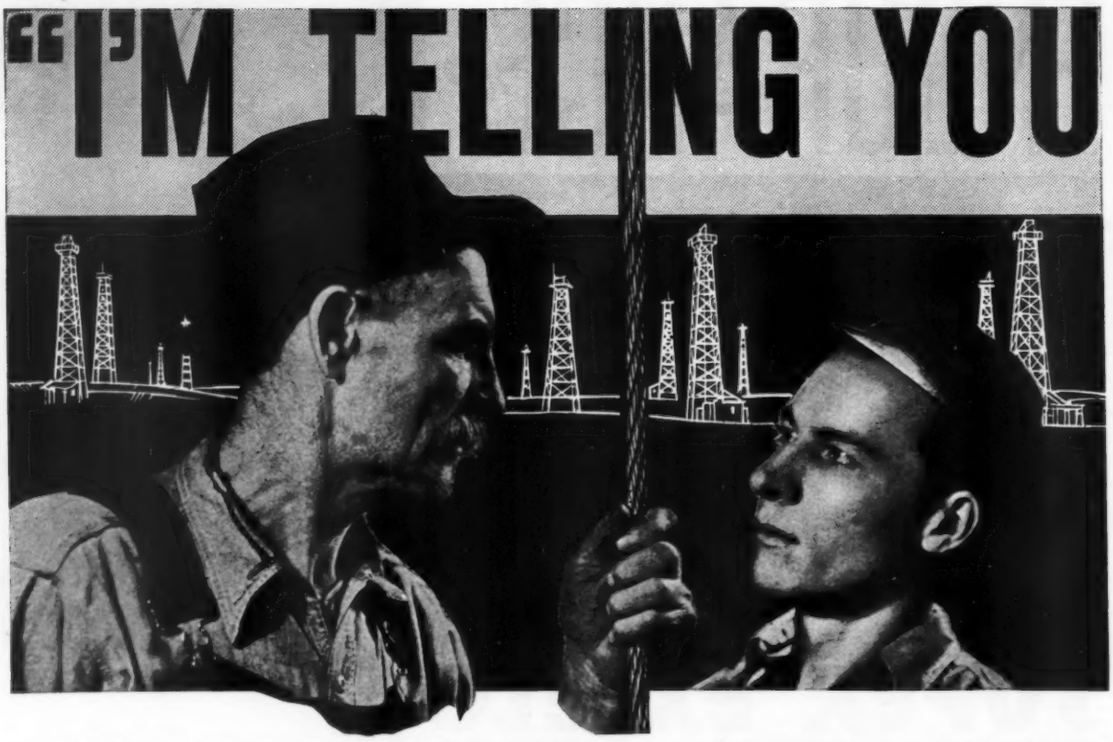

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Development of Reid Vapor Pressure Test on the Pacific Coast

By R. P. CRIPPEN*

During the seven years since its inception, the scope of application of the Reid vapor pressure test to the problems of the petroleum industry has been greatly extended. Introduced originally as a test method mainly to insure the safe transportation of natural gasoline in tank cars, its many applications now include the control of rectification processes to prevent undue losses, the evaluation of natural gasoline as a marketable commodity, as a means of control of the carburetion characteristics of motor fuels, as a numerical basis for computing blends of natural with motor fuel stocks to insure most effective volatility with proper carburetion, and as a basis for estimating the volume of relationship of certain hydrocarbons to other components of natural gasoline.

The test is essentially empirical in nature, although it has considerable scientific significance in practical application to technical problems. Therefore a certain amount of latitude is forthwith granted in applying the test to such problems and in establishing the physical conditions under which it will be conducted, without in any way clouding its identity.

Withal, in spite of a generally expanded scope of application, the procedure for conducting the test, as specified in A.S.T.M. Method D 323-32T, has undergone little official modification since its inception. In recent months such agencies as the American Society for Testing Materials, the Natural Gasoline Association of America and the California Natural Gasoline Association have undertaken definite programs toward revision of the method in the interests of simplifying it, extending its usefulness, and more adequately defining the conditions under which test results will be obtained. In view of this, it may be considered timely to submit a more or less non-technical review of the development of the test in the Pacific Coast region, including discussion of geophysical factors influencing this development and consideration of the variables affecting test results obtained under various conditions.

Pacific Coast Situation

In this region, as compared to others, the production of oil and its corollaries, natural gas and natural gasoline, is restricted to a relatively small area, divided into well defined districts. This geographical factor has effected a close relationship between centers of production and refining, which in turn made the early development of transportation of oil, gas, and natural gasoline by pipe line from productive areas to refining centers a particularly feasible proposition. From the standpoint of the natural gasoline manufacturer, this favorable situation was furthered by the fact that the major producers of natural gasoline are closely integrated departments of the large companies carrying on refining and pipe line operations.

The early development of pipe line transportation was particularly advantageous to the natural gasoline manufacturer in that he could reduce his plant storage capacity to a minimum and avoid evaporation losses by installing closed tankage of the pressure type. A fairly uniform seasonal demand was an additional factor encouraging this practice. His ultimate market, the refiner, was not long in realizing the benefits of this system by installing pressure storage at point of reception.

With the advent of rectification, the natural gasoline industry became vapor pressure conscious. The economic advantages of centralizing this operation, usually under the control of the refiner, were soon realized with the result that a market for unrectified, or only partially rectified natural gasolines was speedily developed. Today this somewhat unique feature of marketing natural gasoline represents a considerable portion of the total Pacific Coast production of the commodity. Undoubtedly the early availability of systems of storage and transfer under pressure played an important part in this development. No direct data are readily available, but it is conservatively estimated that at least 80 per cent of present production is handled through completely closed systems of pressure storage, transfer and reception in the course of Pacific Coast operations.

Present Test Standards

Briefly, the Reid test consists in filling by some definitely specified method a metal chamber of about 150 milliliters capacity (Figure 1) with the sample to be tested, followed by attaching a second chamber, filled with air under atmospheric pressure and known temperature, having four times the volume of the sample in the gasoline chamber. The air chamber carries a suitable pressure gauge. The assembly is then immersed completely up to the gauge in a water bath maintained at 100° F., ±0.5° F., with sufficient agitation by shaking until equilibrium between liquid and vapor is obtained and the gauge reading becomes constant. The air captured in the air chamber balances the pressure of the atmosphere exerted upon the outside of the Bourdon tube, so the gauge registers only the increase in pressure due to vaporization of the sample and the reading is thus given directly in pounds absolute.

The large amount of vapor space provided in the air chamber permits sufficient vaporization of the liquid to induce changes which consequently necessitate rigid standardization of testing conditions if duplicable and consistent results are to be obtained. In spite of its shortcomings from a purely fundamental standpoint, the Reid method has attained a definite place in the industry because of the practicability of applying it to specific problems of a technical nature, coupled with comparative simplicity of technique in conducting it. Test results may be correlated with more fundamental values to represent or express them in simple terms.

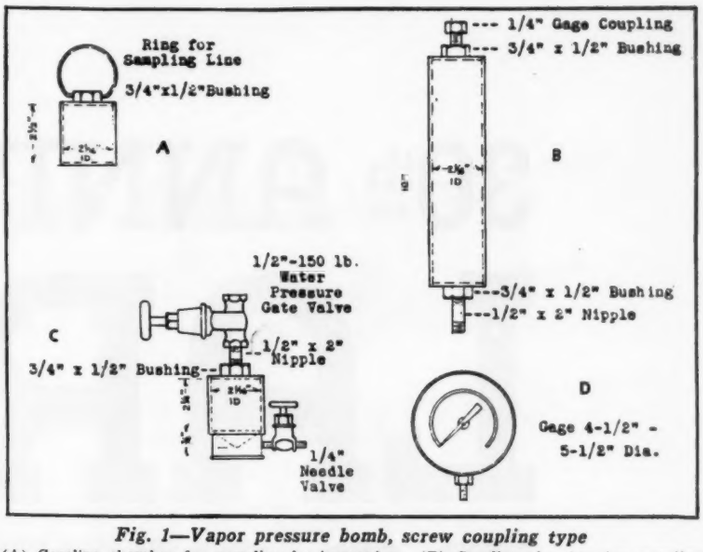

Fig. 1—Vapor pressure bomb, screw coupling type

(A) Gasoline chamber for sampling by immersion. (B) Gasoline chamber for sampling under pressure. (C) Air chamber. (D) Gauge.

TABLE 1—ERRORS IN REID RESULTS DUE TO VAPOR SPACE IN THE PRESSURE-TYPE SAMPLE CONTAINER UNRECTIFIED NATURAL GASOLINE

Successive tests taken from same container previously having a vapor space.		% Error based on 21 3 lb.
Test No. 1	22.0 lb.	+3.28
Test No. 2	21.9 lb.	+2 82
Test No. 3	21.3 lb.	0.00
Test No. 4	21.2 lb.	—0 47
Test No. 5	21.3 lb.	0.00

Under the provisions of A.S.T.M. Method D 323-32T, samples to be tested are taken directly into the gasoline chamber from the original source of the material or from intermediate containers by any one of four optional methods which might prove most applicable under the conditions encountered in practice. From the outset it was considered necessary to provide two types of gasoline chambers with the apparatus in order to meet the varied conditions under which samples would be taken throughout the industry.

Figure 1(A) shows the so-called open or atmospheric pressure type of gasoline chamber, while Figure 1(B) shows the closed or pressure type. It is readily apparent that the closed-type chamber is more flexible in application than the open one, because, by closing the small valve at the bottom and allowing the large valve to remain open, the closed chamber essentially becomes an open one.

The standard method designates the four types of sampling as:

(A) By immersion.
(B) By pouring.
(C) By pressure transfer.
(D) By water displacement.

In Figure 2 various applications of some of these methods are diagramed. (A) shows sample by immersion from open tanks or tank cars. (B) and (C) show sampling by pouring as usually applied to relatively low vapor pressure materials sampled in intermediate containers of the open type. (D) and (E) show methods for sampling from sources under pressure, either directly from the source (D) or from an intermediate container of the closed type (E). Sampling by water displacement is not shown, but simply consists in previously filling the chamber with water and displacing it with sample under conditions in practice necessitating such procedure.

With the development of closed systems under pressure for the storage and transfer of natural gasoline in California, often involving the handling of highly volatile stocks, the natural tendency has been toward development of pressure sampling methods in general. This trend is exemplified in the publications of the California Natural Gasoline Association bearing on the subject, such as Bulletin T.S. 342 on sampling methods, and Bulletin T.S. 341 on tank gauging for pressure storage.[1, 2]

The elimination of losses by vaporization during withdrawal is generally believed to yield a more representative and accurate sample. Pressure sampling methods are believed to offer the best assurance of this condition. Therefore, with the advent of the Reid method, the same principles were applied to sampling for this test, with the consequent inclusion of the pressure-type gasoline chamber in the existing standard test procedure. Furthermore, when the scope of the method was extended to include control of rectification processes, pressure sampling was generally believed to be indicated.

The refiner soon reached the same viewpoint regarding sampling for the test as applied not only to his purchases of natural but also to his vapor recovery product, pressure distillates and other volatile materials. At the same time he is faced with the necessity of applying the test to his aviation and motor fuels as well as other commodities of relatively low vapor pressure. Such materials are invariably stored in what may be somewhat inaccurately designated as "open tankage." In the absence of pressure sampling facilities for the purpose, the California refiner has generally applied the pour sample procedure to this type of sample. Today the usual practice is to apply pressure sampling methods for the Reid test to materials having vapor pressures above 15 pounds and the pour-type sample to those yielding lower values.

Variables Encountered[3]

As mentioned previously, the test is subject to many variables, dependent upon the conditions governing the procedure under which it is made. These variables may be roughly divided into three groups: (1) Variations in sampling procedure; (2) mechanical variables associated with the apparatus and test procedure, and (3) inherent variables in relation to the nature of the test.

It is apparent that the various types of optional sampling offered in the existing standard method could scarcely be considered to yield comparable conditions

TABLE 2—EFFECT OF VARYING INTERCHAMBER VOLUME RATIOS ON REID RESULTS FROM VARIOUS TYPES OF GASOLINES—PRESSURE METHOD OF TEST

Ratio— Sample	2.5	3.0	3.5	4.0	4.5	5.0	Total lbs.	Diff. %@4.0	Diff. lbs.	3.8-4.2 %@4.0
Motor fuel	....	....	9.6	9.6	9.5	9.5	0.1	1.04	0.0	0.0
Rectified natural ...	24.3	24.5	24.4	24.3	24.3	24.0	0.5	2.06	0 0	0.0
Unrectified natural .	....	....	19.6	19.3	18.8	18.1	1.5	7.77	0.6	3 11
Unrectified natural .	....	52.6	51.4	50.4	49.5	48.6	4.0	0.79	0 8	0.16
Unrectified natural .	....	61.5	61.0	60.2	59.4	58.5	3.0	0.50	0.7	0.12

*Chairman, Committee No. 3, Compilation of Gasoline Tests, California Natural Gasoline Association.

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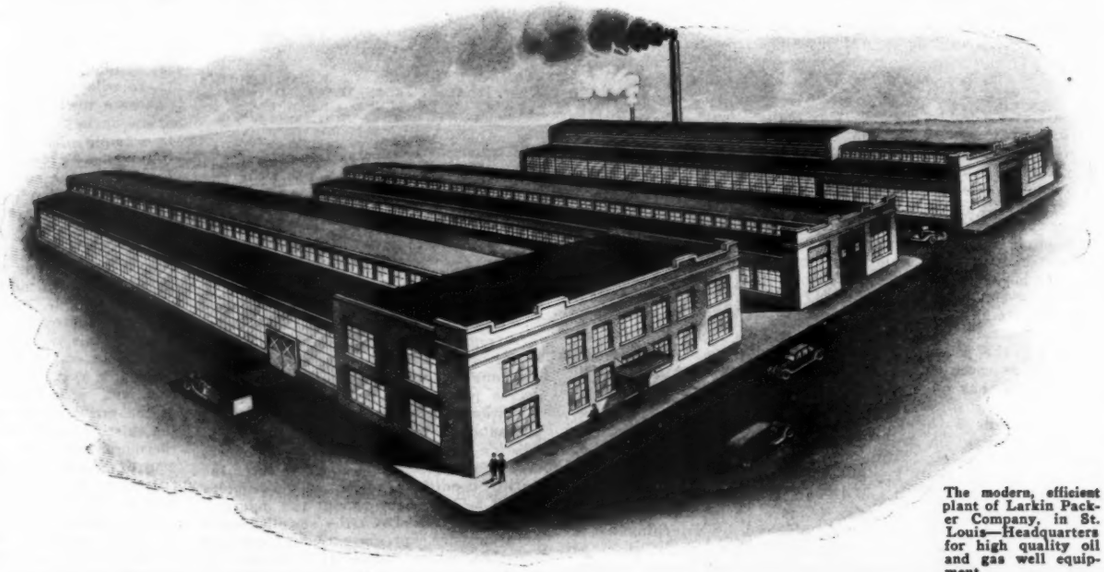

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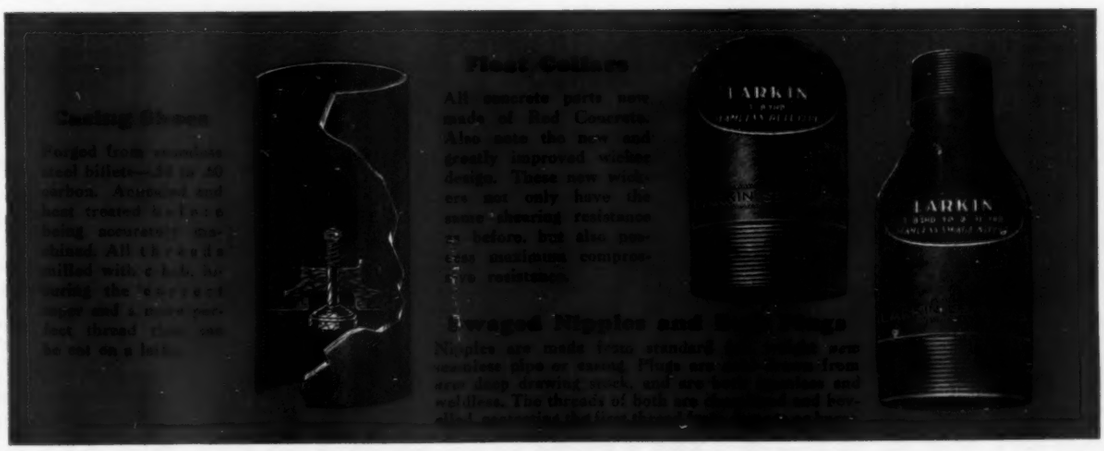

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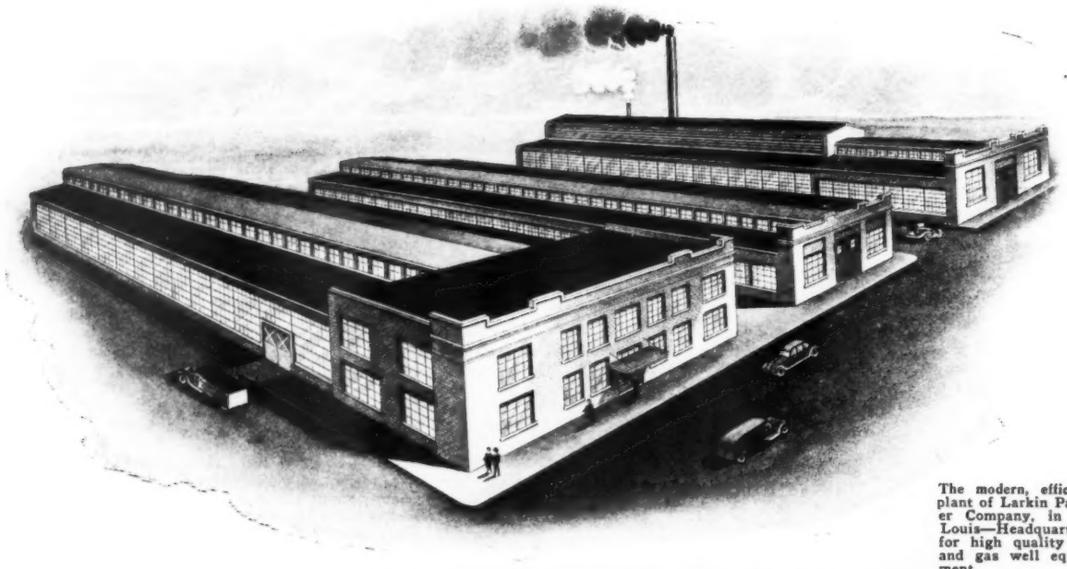

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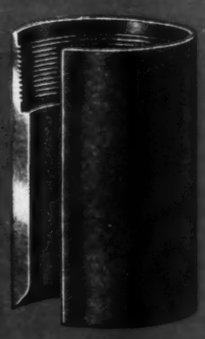

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under which samples might be obtained. Therefore it is evident that results obtained by different methods of sampling applied to the same material, particularly of high volatility, would not be expected to yield duplicate results. This being the case, in practical effect, the four optional methods of sampling offered in the procedure really constitute four different tests in one method. Such a situation could easily lead to confusion, but apparently no serious complications along this line have developed on the Pacific Coast. Sampling methods in this region are rather clearly defined as to their application.

Another factor entering the sampling problem is the question of the temperature at which the sample is taken into the apparatus. With the exception of the pour sample procedure, no definite temperature is specified for this phase of the test in the present method. This question is of some importance, even in pressure sampling, as will become evident in subsequent discussion. Theoretically, on a gasoline of about 22 pounds, a difference of 40° F. in temperature of sample introduced under pressure (without change in composition) will cause a variation of two-tenths of a pound, or about 0.9 per cent. This has been borne out substantially in practice. Ordinarily this factor is of little practical significance as sample withdrawal temperatures will usually be fairly uniform in normal practice.

Pressure Sampling

Another point of greater significance is often involved in pressure sampling where an intermediate container is used. After withdrawing the sample into such a container, it is the usual practice to create a vapor space in it to avoid its rupture by thermal expansion of the liquid. Subsequently this vapor is recondensed by applying water pressure preparatory to displacing the liquid into the gasoline chamber. However, unless the container is agitated, the composition of the liquid will not be uniform and any sample withdrawn will not be representative, in that lighter components of the sample will be concentrated in that portion of the bomb in proximity to the vapors before their recondensation. Table 1 shows a characteristic series of results of a 22-pound material revealing this error.

Mechanical variables are chiefly due to controllable factors such as inaccuracies in construction of apparatus resulting in improper interchamber volume ratio. Table 2 shows the effect of variations in interchamber ratio upon results obtained with various types of materials. In general it has been found that the present specification of 3.8 to 4.2 is adequate for low vapor pressure stocks or well rectified natural gasolines. However, a considerable variation is shown with unrectified stocks of as low as 19 pounds. Therefore the ratio should be mechanically adjusted to as close to 4 as possible in order to meet all possible types of materials.

In using the pressure-type apparatus, it is essential to be sure that the fittings screwed into the gasoline chamber to carry the valves do not project inside sufficiently to create shoulders which would prevent proper purging or create air pockets in the apparatus.

Another mechanical variable is inaccurate bath temperature. On a 25-pound gasoline a total variation of 1° F. in bath temperature (as specified in the present procedure) will produce a variation in results of eighth-tenths of a pound, or about 3 per cent. Therefore bath temperature should not be allowed to vary more than a total of two-tenths of a degree from 100° F. during a test and final reading should only be taken at exactly 100° F. This entails the use of a suitable and accurate thermometer and is a strong point in favor of automatic control of bath temperature.

Selection of a pressure gauge of suitable range and maintaining it in an accurate condition is essential to accurate and concordant results. From the refining interests there is considerable current complaint of the short life of gauges due to corrosion in dealing with cracked distillates. This is a problem apparently open to study by gauge manufacturers. Corrosion of the rest of the apparatus is generally being overcome by use of special alloys in fabricating and assembling the chambers and fittings.

These and other mechanical variables may be overcome by strict adherence to adequate standards. Special attention to them and similar difficulties is being given by Committee No. 3 of the California Natural Gasoline Association in the course of a comprehensive study of the test.

The inherent variables involved may be thought of as centering around failure to secure a constant volume relationship between the air and gasoline. Assuming that the proper interchamber volume ratio has been obtained in construction of the apparatus, this relationship is still subject to change due to the effects of thermal expansion of the liquid in the gasoline chamber, flash vaporization of lighter components from the sample, and solubility effects between sample and air. Indirect factors are saturation of the sample and air with moisture during the test and thermal expansion of the air as related to its solubility in the gasoline resulting from increased pressure.

In that these factors are at present being studied in the course of the various programs directed toward modification of the test procedure, there is little conclusive data available regarding their effects. The effect of thermal expansion of the air toward increasing the total pressure is offset at present by applying an additive correction to the final test results. This correction is derived mathematically from the gas laws. This suffices very well for samples handled by immersion or pouring, as such samples are more or less saturated with air to begin with, but it does not take care of air-free samples taken under pressure. Such samples take up air from the air chamber to an extent dependent upon conditions surrounding the test. The net effects of this are shown in Table 3, where it is evident that in extreme cases errors of the order of 1.5 per cent may be encountered.

TABLE 3—VARIATIONS IN REID RESULTS DUE TO DIFFERENCE IN INITIAL TEMPERATURES OF THE AIR CHAMBER. THE APPLICATION OF STANDARD FACTORS DOES NOT CORRECT ACCURATELY FOR THERMAL EXPANSION OF AIR BECAUSE OF AIR SOLUBILITY EFFECTS ON PRESSURE SAMPLES DURING THE TEST

Material—	Initial temp of air chamber °F.	Corrected Reid vapor pressure, lbs.	Differential temp. 100° F.	% Dev.
Unrectified natural	100	45.65	0.00	...
Unrectified natural	85	45.30	0 35	0 8
Unrectified natural	70	45.25	0.40	0.9
Unrectified natural	45	45.00	0 65	1 4
Unrectified natural	32	44.90	0.75	1 6
Rectified natural	100	25 6	0 0	...
Rectified natural	90	25 5	0.1	0.4
Rectified natural	80	25.4	0.2	0.8
Rectified natural	70	25.3	0.3	1.2
Rectified natural	60	25.2	0.4	1.6
Rectified natural	100	16.25	0 00	...
Rectified natural	60	16.10	0.15	0.9
Rectified natural	50	16.10	0.15	0.9
Rectified natural	32	16 05	0.20	1.2
Pressure distillate	100	16.8	0.0	...
Pressure distillate	80	16.7	0.1	0.6
Motor fuel	100	11.9	0.0	...
Motor fuel	80	11.8	0.1	0.8
Motor fuel	32	11.7	0.2	1.7
Motor fuel	100	8.0	0.0	...
Motor fuel	80	8.0	0.0	0 0
Motor fuel	32	7.9	0.1	1.3

TABLE 5—CHARACTERISTIC DUPLICABILITY OF REID RESULTS BY THE PRESSURE TEST BETWEEN TWO LABORATORIES IN THE COURSE OF DAILY EXCHANGE OPERATIONS—IN POUNDS

A	B	Diff.	A	B	Diff.	A	B	Diff.
25.3	25.1	0.2	24.7	24.6	0.1	19.9	20.0	0.1
25 2	25.2	0.0	24.8	24.8	0.0	20.2	20.0	0.2
25 2	25 0	0.2	24.7	24.8	0.1	20.5	20.6	0.1
25.3	25.4	0.1	24.9	24.9	0.0	20.0	20.1	0.1
25.2	25.2	0.0	24.8	24.7	0.1	20.0	20.0	0.0
25.6	25.4	0.1	24.7	24.5	0.2	19.6	19.4	0.2
25.3	25.0	0.3	24.4	24.3	0.1	19.7	19.6	0.1
25.5	25.6	0.1	24.7	24.5	0.2	20.1	20.3	0.2
25.1	25.1	0.0	24.9	24.7	0.2	19.9	20.2	0.3
25.3	25.2	0.1	24.1	24.4	0.3	20.4	20.3	0.1

Note—Laboratory "A" sampled direct from source. Laboratory "B" sampled from intermediate pressure container.

TABLE 4—THEORETICAL INCREASE IN REID VAPOR PRESSURE DUE TO SATURATION OF THE SAMPLE WITH AIR

Gasoline Saturated with air at lbs. R.V.P.	Increase in V.P. 40° F.	Increase in V.P. 60° F.
8	1.09	0.91
10	1.03	0.82
12	0.96	0.73
14	0.90	0.64
16	0.84	0.55
18	0.77	0.45
20	0.71	0.35
22	0 64	0.26
24	0.58	0.16
26	0.51	0.07

It has been suggested that the difficulty may be overcome by repressuring the sample (at some convenient fixed temperature) with air before introducing it into the apparatus. This offers interesting possibilities, but there are some apparent difficulties attached to securing presaturation of a highly volatile sample under practicable conditions, without changes in composition resulting from losses due to vaporization. Whether such change in composition would be of any moment remain to be investigated. Another measure which might be taken to reduce this effect toward a constant basis would involve heating the air chamber to approximately 100° F. before attaching it to the gasoline chamber and at the same time eliminate the arithmetical correction. Such a measure would probably have little significance in a test on a sample transferred by pouring or taken by immersion, but might be important when applied to a test on an air-free sample.

Aside from its possibilities as a measure to reduce variables in test conditions, presaturation of the sample is of interest from another standpoint. Table 4 shows the theoretical approximate increase in vapor pressure due to saturation of samples with air. In as much as the refiner is interested in blending the proper amount of a natural (probably in air-free storage) with a motor fuel stock, to yield proper carburetion characteristics in a finished fuel which will eventually become saturated with air, it might prove convenient for him to deal entirely with values obtained on air-saturated samples in computing the blending relationship. The natural gasoline manufacturer may be faced with the problem of delivering a product of definite vapor pressure specification at point of delivery under conditions where the material will become air-saturated en route.

In view of the apparent need for the development of a Reid test providing for presaturation of the sample with air, it would follow that alternative methods not including such a provision would have to be omitted from the procedure in order to avoid inevitable confusion in the proper application of the test to various problems. At the same time it is essential to secure representative samples

(Continued on Page 64)

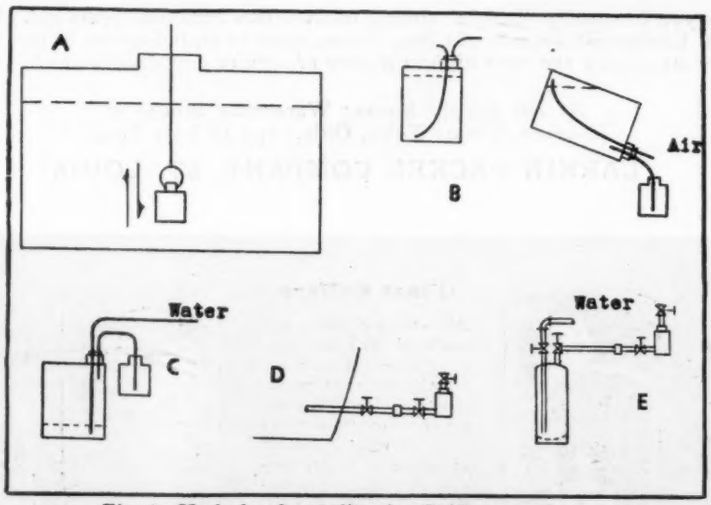
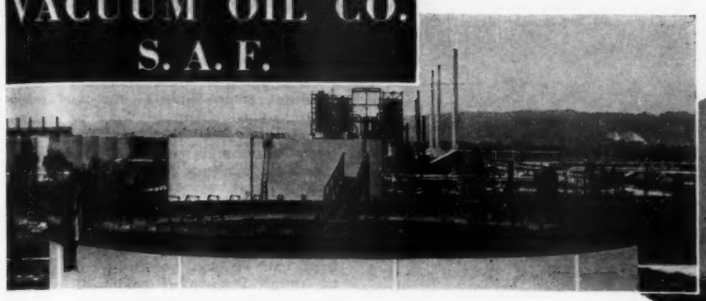


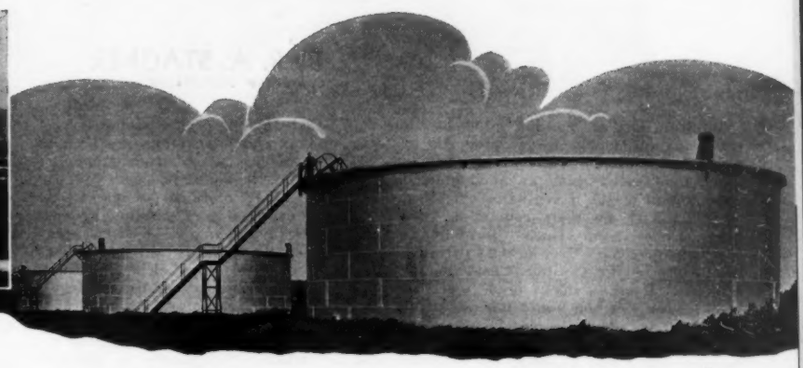
Fig. 2—Methods of sampling for Reid vapor pressure

(A) Sampling by immersion: The gasoline chamber is suspended in the liquid to be sampled and is then lowered and raised until full. It is then withdrawn, emptied and refilled in the same manner. The air chamber is immediately attached. The pressure-type chamber may be similarly used where occasion demands. In this case the one-half inch valve may be closed instead of attaching the air chamber. (B) Sampling by pouring: The sample is taken in an intermediate container. A stopper, carrying two pieces of glass or metal tubing as shown, is then inserted and the container inverted. The tube delivering the sample is long enough to reach the bottom of the gasoline chamber, thus reducing turbulence. Both container and chamber may be refrigerated if required. Air from the atmosphere displaces the sample as it flows from the container. (C) Sampling by pouring: This arrangement is similar to (B) except that water under pressure displaces the gasoline from the container. Where the pressure-type chamber is adapted to this method, it is advantageous to connect the delivery tube directly to the small valve at the bottom of the chamber. (D) Sampling under pressure: The similarity between arrangements (D) and (E) is evident. Also between (C) and (E), where the only difference is type of equipment. The pressure-type chamber is directly connected to the source of sample under pressure by the small valve at its bottom. The small valve is opened and the large valve is closed. The valve on the sample tap is then fully opened. The large valve on the chamber is then opened only sufficient to vent the air from the chamber and connections without appreciable diminution in system pressure. A volume of gasoline equal to twice the capacity of the chamber is allowed to purge through after all air bubbles have been vented. The valves are then closed and the chamber is disconnected. (E) Sampling under pressure.

LEADING FRENCH REFINERIES use WIGGINS Pontoon Roofs to Stop Evaporation

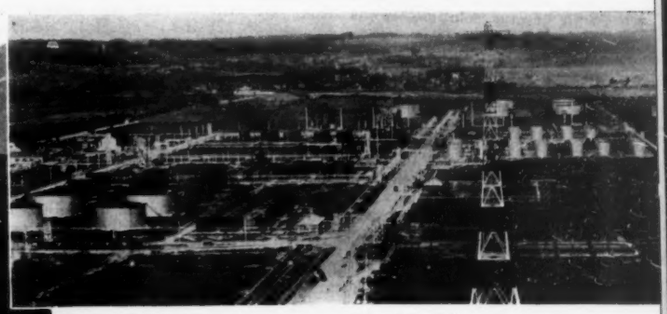
Raffineries de la VACUUM OIL CO. S. A. F.





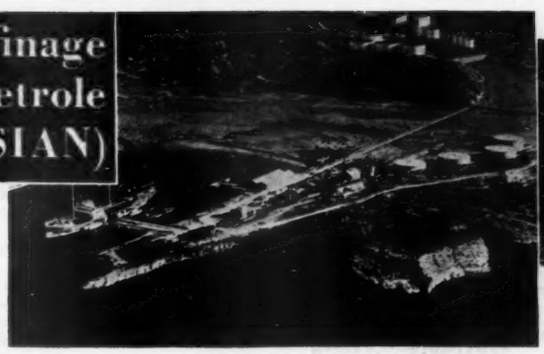
The new 5000 bbl. plant of the Raffineries de la Vacuum Oil Co., S.A.F., is located at Notre Dame de Gravenchon on the Seine River. While designed primarily for lubricating oil production, the plant will also produce 1400 bbls. of gasoline per day which is stored in three 50,000 bbl., two 20,000 bbl. and four 10,000 bbl. tanks all equipped with Wiggins Pontoon Roofs to eliminate evaporation. The crude oil is received in tankers and stored in six 80,000 bbl. tanks equipped with Wiggins Breather Roofs.

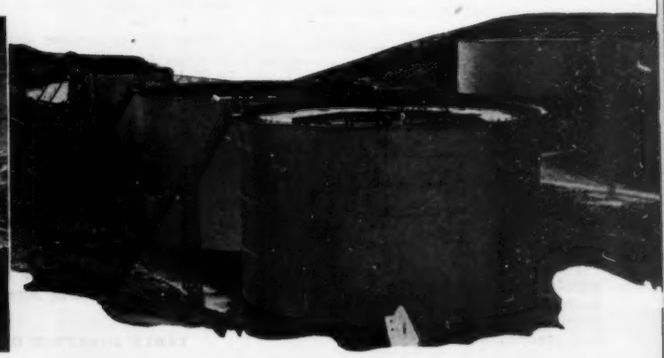
STANDARD Franco Americaine de Raffinage



The Standard Franco Americaine de Raffinage refinery at Port Jerome, France, has eight storage tanks 120 ft. in diameter and 42 ft. high equipped with Wiggins Pontoon Roofs for crude oil storage. In addition to these tanks four 100 ft. diameter, thirteen 40 ft. diameter and one 35 ft. diameter tanks with Wiggins Pontoon Roofs are used for naphtha storage.

Société de Raffinage des Huiles de Petrole (ANGLO-PERSIAN)





The L'Avera refinery of the Societe de Raffinage des Huiles de Petrole (Anglo-Persian associate) is located on the Mediterranean coast east of Marseilles. Built to refine crude from Persia and Iraq, the greater part of its storage capacity is under Wiggins Pontoon Roofs, and includes five 10,000 ton, two 3,500 ton and four 1,000 ton tanks.

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Alcoholic Caustic Solution More Responsive as Sweetening Reagent

By B. A. STAGNER
Consulting Chemical Engineer*

Substantially all gasoline produced by cracking[a] and much of that produced by straight distillation contain a small amount of mercaptans as an impurity. The amount of the mercaptans, expressed for simplicity as their content of sulphur, varies from almost zero to as much, in extreme cases, as 0.25 per cent by weight of the gasoline. The amount depends on the stock used and, in cracked gasoline, on the temperature of the cracking. The mercaptans of seven or fewer carbon atoms have an objectionable odor; and although the mercaptans themselves are not corrosive to metals, they are all extremely corrosive in the presence of elementary sulphur and are, therefore, not tolerated in gasoline.

For many years the mercaptans have been eliminated by treating the gasoline with "doctor solution," which is an alkaline aqueous solution of sodium plumbite, and a carefully determined quantity of elementary sulphur; the sulphur required is not definitely proportional to the mercaptan sulphur but varies to some extent with the type of mercaptans. The sulphur oxidizes the mercaptans to alkyl disulphides and doubtless converts some of the disulphides to trisulphides. The finished gasoline gives negative reactions for mercaptans in the doctor test and for elementary sulphur (corrosiveness) in the copper strip test.

The reaction of this sweetening process is often expressed as follows:

$$2RSH + S + Na_2PbO_2 =$$

$$R_2S_2 + PbS + 2NaOH$$

A higher proportion of free sulphur is required than the equation indicates, and Ott and Reid[b] have shown that besides lead sulphides, other insoluble lead compounds are formed, such as $Pb_2S(SR)_2$, $Pb_2(OH)_2S_2$, $Pb_2(OH)_2S_3$, etc. The alkyl sulphides remain dissolved in the gasoline. They are usually considered innocuous in the gasoline except that they increase slightly the total sulphur content, the detonation, and the color instability. These alkyl sulphides have higher boiling points than the original mercaptans, and, if the gasoline is first sweetened and then distilled, some of the sulphides are left in the still. An additional sweetening is necessary, however, in as much as a small percentage of the alkyl sulphides is reconverted to mercaptans during the distillation. The two stages of sweetening thus yield a slightly better quality of gasoline.

The ideal method of handling the mercaptans would be to extract them completely from the gasoline, but the petroleum industry still awaits an economical procedure commensurate with the small improvement attained.

New Method of Sweetening

It has been discovered[3] that, when elementary sulphur and mercaptans are brought together in solution in gasoline in intimate contact with a very small amount of an alcoholic solution of anhydrous alkali, they react instantly with each other; and if proper proportions of the sulphur and mercaptans are brought together under this condition, they are both totally eliminated as such. No lead is required. It is thus possible to remove mercaptans from gasoline by adding the requisite amount of elementary sulphur and anhydrous alcoholic alkali solution, or to remove elementary sulphur from gasoline by adding the requisite amount of mercaptans, or preferably a definite amount of gasoline which contains mercaptans, and the anyhdrous alcoholic alkali. Frequently a refinery may have one type of gasoline bearing elementary sulphur and another type bearing mercaptans. A proper blending of these two types agitated with water-free alkali will free the mixture of both substances.

It is found to be much more economical of time and reagent to apply the anhydrous alkali in solution in alcohol, preferably methanol. The alcohol serves to disperse the alkali throughout the gasoline in a fine state of division, doubtless molecular; and the alkali, if added in the minimum amount, is almost completely exhausted in the reaction with the sulphur and mercaptans. The quantity of alcoholic alkali solution required is dependent on the degree of sourness of the gasoline, but it is surprisingly small—1 pint per barrel in a typical California cracked gasoline, as described later in this article.

The essential reaction is that of oxidizing the mercaptans by sulphur, the mercaptans being converted to alkyl disulphides and the sulphur to alkali sulphide. The simplest expression for the oxidation is:

$$2RSH + S + 2NaOH =$$

$$R_2S_2 + Na_2S + 2H_2O$$

However, more elementary sulphur and caustic soda are involved than is indicated by the simple equation. It is probable that the newly formed sodium sulphide is in competition with the mercaptans for the sulphur.

Some of the earliest data obtained on sweetening cracked gasoline are shown in Table 1. The data show clearly the effect of adding the requisite proportion of sulphur. They also show that sodium and potassium hydroxides are essentially equivalent in this process.

In Experiments A-1 and B-1 of Table 1, the requisite amount of sulphur was added to oxidize the mercaptans and leave the gasoline free from elementary sulphur. In Experiments A-2 and B-2, too much sulphur was added. It sweetened the gasoline, but the sulphur in excess made the gasoline corrosive. In A-3 and B-3, insufficient sulphur was added to destroy the mercaptans, but all the sulphur was utilized and the gasoline was not left corrosive. In A-4 and B-4, no sulphur at all was added; and although 40 and 60 times, respectively, as much alcoholic alkali were used as in Experiments A-1 and B-1, the gasoline remained unsweetened. In A-4 and B-4, the treatment consisted in extraction alone and not in oxidation. Mercaptans of low molecular weight are sufficiently acidic to form alkali mercaptides which are stable enough to permit extraction with alcohol or even with a large volume of water; but the mercaptans of high molecular weight are too weakly acidic to form alkali mercaptides stable enough to permit economic extraction. However, if the mercaptans of low molecular weight are extracted with alcoholic alkali, they must later be handled and the alcohol recovered.

In the new process here described, the mercaptans are not extracted but are converted to alkyl disulphides. The process has also been found applicable for sweetening kerosene, which contains mercaptans of distinctly higher molecular weights and boiling points than those associated with gasoline.

Air is neither required nor desirable. It is so slow in its rate of oxidation, compared with sulphur, that its influence is practically negligible, and it causes a loss of some of the gasoline through evaporation.

The ratio of elementary sulphur to mercaptan sulphur required for different types of gasoline in this new process shows a variation as great as or greater than the ratio in the plumbite treatment, although it is fixed, within limits, for any one gasoline. The variation for a given sample has a range of 10 to 15 per cent from the mean.

The caustic alkali appears to be converted at first into polysulphides and later, depending upon conditions, into normal sulphide and thiosulphate, all of which are extremely soluble in water. These alkali-sulphur by-products have not been completely investigated, but it appears that the relative percentages formed vary to some extent for different samples of gasoline.

Because of its cheapness caustic soda is preferable to caustic potash. Its maximum solubility in methanol at normal temperatures is approximately 23 grams per 100 ml. of solution, but about 15 grams per 100 ml. is preferable because the weaker solution is more easily dispersed in the gasoline.

The sulphur can be applied to the gasoline by any means common to the plumbite treatment, either as a powder or, preferably, in solution in a small volume of the gasoline, which in turn is added to the main volume in continuous operation. Likewise, any simple means, such as a centrifugal pump or orifice plates in a pipe, is satisfactory for commingling the reagents and gasoline.

The sweetened gasoline is sufficiently stable in color for most practical purposes; but the stability can be increased, if found desirable, by acidifying or washing the gasoline with a little dilute sulphuric acid (10 to 60 per cent concentration), which quickly and completely settles out. Instead of the acid treatment, an acidic antioxidation catalyst can be used.

TABLE 1—EFFECT OF ELEMENTARY SULPHUR IN SWEETENING WITH ANHYDROUS ALKALIES

No. of experiment	Alcoholic alkali solution: Reagent used, lb./bbl.	Alcoholic alkali solution: Alkali in reagent, pct. by wt.	Sulphur added, lb./bbl.	Tests on treated gasoline: "Doctor" for mercaptans	Tests on treated gasoline: Copper strip for elementary sulphur
	Alcohol-NaOH				
A-1	0.35	14	0.025	—	—
A-2	0.35	14	0.035	—	+
A-3	0.35	14	0.020	+	—
A-4	14.00	14	0.000	+	—
	Alcohol-KOH				
B-1	0.25	28	0.025	—	—
B-2	0.25	28	0.035	—	+
B-3	0.25	28	0.020	+	—
B-4	15.00	28	0.000	+	—

Many Experiments Made

Many experiments with this process have been made on all types of cracked gasoline, some slightly sour and others extremely sour (up to 2 grams mercaptan sulphur per liter, or 0.26 per cent by weight), and without a single exception the gasolines have been successfully sweetened.

The following data on sweetening a given sample of cracked gasoline is typical of the new process. The gasoline used had an end boiling point of 200° C. (392° F.); total combined sulphur, 0.40 per cent; mercaptan sulphur, 0.023 per cent (0.175 gram per liter); and no elementary sulphur. A liter of this gasoline was agitated mechanically out of contact with air (natural gas atmosphere) for one-half minute with 0.29 gram elementary sulphur and 3.1 ml. of methanol-caustic soda solution containing 0.15 gram caustic soda per ml., or a total of 0.465 gram caustic soda. (Expressed in amounts per barrel of gasoline, the elementary sulphur was 0.1 pound; the alcoholic solution of caustic soda, 1 pint; and the total caustic soda, 0.16 pound.) On standing 10 minutes, the alkali by-products, in complete solution in the larger portion of the alcohol originally introduced, settled to the bottom of the container. Two liquid phases were thus present, and their interface was as sharply defined as that between water and gasoline.

At the above stage of separation, the gasoline was sweet and non-corrosive, and on a large scale it would be withdrawn from the alkali by-products and washed with only enough water to dilute by about tenfold the alcohol still in solution to complete the separation of the alcohol from the gasoline.

Recovering Methanol

In a laboratory experiment on recovering methanol the alcohol was added to gasoline in the proportion of 1 pint to a barrel and extracted with 10 pints of water. The aqueous solution was settled from the gasoline, further diluted with water, and distilled, and the quantity of alcohol in the distillate was determined from specific gravity tabulations. The data indicated that 100 per cent of the alcohol was recovered.

The alkali by-products formed in the sweetening experiments described above were exposed to air and then analyzed by the methods of Griffin[4] and of Tartar and Draves[4]. The analysis showed traces of sodium polysulphide, free caustic soda, and large proportions of normal sodium sulphide (Na_2S) and sodium thiosulphate ($Na_2S_2O_3 \cdot 5H_2O$). The mixture was entirely free from mercaptans. About 50 per cent of the original caustic soda was converted into sodium sulphide and 25 per cent into sodium thiosulphate. Calculations from these data indicate that 1 pound of caustic soda would produce about 0.5 pound of actual sodium sulphide and 0.75 pound of sodium thiosulphate. The retail price of solid 60 per cent sodium sulphide is 3.5 cents per pound (5.8 cents for actual Na_2S), and of sodium thiosulphate, 2.5 cents. In as much as approximately 50,000,000 pounds of each of these chemicals are produced annually in the United States[5], it seems probable that a substantial market may exist for them. The sulphide is used extensively in flotation processes and as a depilatory in tanneries; the thiosulphate is used extensively as a reducing agent

*Published in "Industrial and Engineering Chemistry."

[a] The present production of cracked gasoline in the United States is about 160,000,000 bbls. per year.

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Effect of Water in the Gasoline

It is desirable to keep the reagents and the gasoline reasonably free from water during the sweetening, and for this purpose the normal precautions of the refinery are sufficient. Gasoline is found to be satisfactorily sweetened one-half hour after it has been steam-distilled and while it still contains a white cloud of moisture. The alcoholic-alkali solution itself may contain a little water, but a large amount markedly lowers its efficiency.

Recovery of the Alcohol

Because of the efficiency of the alcohol in bringing the alkali into intimate contact with the sulphur and mercaptans, it is apparent that the alcohols of higher molecular weight with their complete solubility in gasoline would in this respect be more suitable than methanol with its relatively low solubility, but the greater difficulty of extracting them from the gasoline seems to preclude their use. Anhydrous methanol is soluble in gasoline to the extent of about 3 to 10 per cent, the solubility being greater in the more volatile hydrocarbons.

In recovering the alcohol from the gasoline, the water used for extracting can be repeatedly used without the necessity of distilling all of the alcohol from the aqueous solution each time it passes through the still. A portion of this solution can be added to the alcoholic alkali by-products, previously settled from the gasoline, and the alcohol can be distilled completely therefrom, leaving the alkali by-products in an aqueous solution in any desired concentration.

Methanol, unlike ethanol, does not form a constant-boiling mixture with water and can be distilled from it in substantially anhydrous condition in a continuous still provided with ample fractionation. It appears certain that the alcohol can be used and recovered with a loss not to exceed 0.1 to 0.2 per cent and that the cost of recovering the alcohol would not be greater than 0.5 cent per gallon.

Other Considerations

In sweetening with sulphur and alcoholic alkali, sodium and potassium hydroxides are found to be very nearly equivalent in their behavior; this similarity would not be anticipated when it is considered that alcoholic potash extracts elementary sulphur from gasoline almost instantly[4], whereas alcoholic caustic soda is incomparably slower.

The application of powdered alkalies or alkaline earths and sulphur for sweetening introduces a difficulty in securing contact. A large excess of the alkali and relatively long periods of agitation are required.

As a result of many experiments it has been concluded that sulphur and alcoholic solutions of ammonia will not sweeten gasoline. It likewise is impossible to omit elementary sulphur and sweeten gasoline at ordinary temperatures with an alcoholic solution of caustic alkali and an alkali polysulphide. The latter experiments were made in the search for a method that would supply only the necessary sulphur for the oxidation without the usual danger of adding an excess.

Comparison of the Two Gasolines

Loss of Gasoline.—In order that the new process may be compared with the plumbite treatment, the data on sweetening with plumbite and sulphur a liter of the gasoline described above are submitted. The minimum of elementary sulphur that would permit a "break" of the partly spent plumbite solution from the gasoline was added; this amount was 0.12 gram per liter, or approximately 40 per cent as much as was used in the alcoholic alkali process. The plumbite solution was added in excess, as usual, and, as the reaction is slower in the plumbite treatment, the time of agitation was extended to five minutes. The mixture was settled for a half hour after the agitation; during this period approximately 50 ml. of heavy emulsion of gasoline and partly spent plumbite solution, thoroughly stabilized by insoluble lead sulphide, collected between the gasoline and the aqueous plumbite solution. Some of the dark lead reaction products remained suspended throughout the main volume of the gasoline and would not separate until the gasoline was washed with several portions of water.

The quantity and the stability of the emulsion that is always formed in the plumbite treatment vary from time to time, and the consequent loss of gasoline from this cause also varies. However, the annual loss in the different refineries is reported to be from 0.25 to 1.5 per cent, and an average of 0.5 to 1 per cent may be assumed to be fairly accurate for all refineries except those that have recently installed centrifuges to handle this emulsion and save the gasoline. In contrast, the sweetening with the alcoholic-alkali, including subsequent washing with water, does not produce emulsions and consequent loss of gasoline.

Quality of Sweetened Products

The two methods of sweetening are alike in their effects on the total content of sulphur and gum in the finished gasoline; they completely sweeten, and they leave the gasoline non-corrosive to a copper strip in the official method of testing. Neither process prevents a dark discoloration, indicative of elementary sulphur or of polysulphide sulphur, when the gasoline is agitated with the extremely sensitive metallic mercury. In fact, mercury still produces the same discoloration in the sweetened gasoline after it has been extracted with alcoholic solution of potash or of sodium sulphide, both of which solutions are satisfactory for freeing gasoline of elementary sulphur and making it non-corrosive.

Cost of Sweetening by the New Process

The cost data for the new process of sweetening per barrel of the gasoline described in the experiment above are as follows:

0.10 lb. sulphur, at $18 per ton	$0.00090	
0.16 lb. caustic soda, at $50 per ton	0.00400	
		$0.00490
Loss of 0.2% of 1 pint alcohol, at $0.36 per gallon	$0.00009	
Recovery of 1 pint alcohol, at $0.005 per gallon	0.00062	
		$0.00071
Total per barrel, excluding credits for gasoline saved and for by-products		$0.00561

In as much as this process avoids the loss of gasoline, it can be credited with the saving of about 0.5 to 1 per cent of the gasoline, or from 0.21 to 0.42 gallon for each barrel treated. If gasoline is worth 6 cents per gallon, this saving amounts to 1.25 to 2.50 cents per barrel of gasoline sweetened. In addition, it is probable that the alkali by-products will have a definite commercial value.

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[2]Ott, Emil, and Reid, F. E., Ind. Eng. Chem., 22, 884 (1930).

[3]Stagner, B. A., U. S. Patent 1,970,583 (August 21, 1934).

[4]Tartar, H. V., and Draves, C. Z., J. Am. Chem. Soc. 46, 575 (1924).

[5]U. S. Department of Commerce, Census of Manufactures (Biennial Report), Data on Sodium Compounds, November 23, 1932.

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Development of Reid Vapor Pressure Test

(Continued from Page 60)

and to avoid conditions entailing uncontrollable losses or other factors conducive to inconsistent test results. The problem does not appear simple in view of the fact that the California industry deals considerably in higher volatile materials difficult to handle. Therefore, it may be advisable to formulate two separate and distinct procedures for handling the sample and conducting the test under various conditions, supplemented by specific definition of the applicability of each. This solution of the problem is being carefully studied by C.N.G.A. Committee No. 3.

There does not seem to be any convenient means of controlling variables due to the so-called "piston effect" caused by thermal expansion of the gasoline under test. This and the factor of flash evaporization can to some extent be reduced toward a constant basis by specifying a fixed temperature for sample introduction. However, such a provision would be decidedly inconvenient in sampling directly at the source with the gasoline chamber.

In spite of the numerous variables cited, there appears to be no serious discrepancy between test values obtained by different testers on the same material where sufficient care and attention are given to details. Table 5 shows a series of typical results selected at random as determined by two different laboratories in the course of daily exchange of different types of naturals.

Standard Method Results

The existing standard method provides that results shall agree within one-half pound. This means that results may vary between 1 per cent on 50-pound material to 5 per cent on a 10-pound gasoline. No difficulty is encountered in meeting these requirements locally. In fact, as a result of the habit engendered by close control of rectification processes, failure to duplicate results within three-tenths of a pound on ordinary 25-pound natural usually is a matter of sufficient concern to warrant immediate investigation of the discrepancies. Specifications sometimes stipulate vapor pressure control within two-tenths of a pound.

Normal ability to control the test within close limits has led to the development of a number of empirical relationships[4, 5] between Reid vapor pressure and other properties of natural gasoline.

In reviewing the general situation with regard to the development of the Reid test on the Pacific Coast, it is evident that, while there is considerable room for improvement through modification of test procedure, the industry is not faced with adverse situations resulting from confusion in the application of the various alternative provisions of the existing method to current operating problems. While it would be desirable to reduce the method to one set of universally applicable conditions, apparent difficulties exist, due to the widely variant nature of the materials to which the test is applied on the Pacific Coast. In as much as there appears to be little trouble generally in obtaining duplicate and consistent results with the existing method, any moves toward its revision should be made slowly and carefully, to avoid the damaging effects of possible confusion resulting from poorly considered changes.

In the preparation of this review the writer wishes to acknowledge the help and generous co-operation of his fellow members engaged in the technical activities of the California Natural Gasoline Association, and particularly the work of Committee No. 3. This group, through hard and consistent effort, is endeavoring to further the position of the test, in its relation to all interests in the industry, by development of improved methods for conducting it.

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[2]Tentative Standard Method for Gauging Natural Gasoline in Pressure Storage, Bulletin T.S. 341, Calif. Nat. Gasoline Assn., Los Angeles, Calif.

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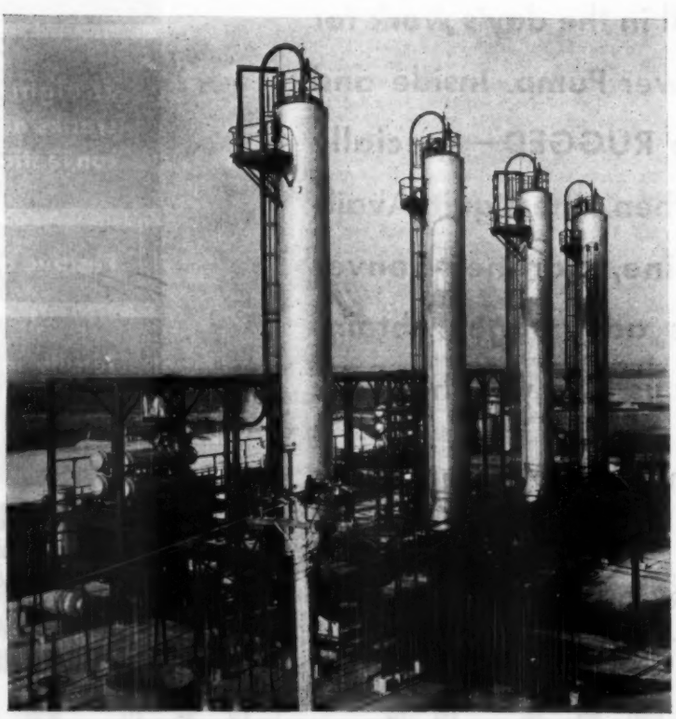
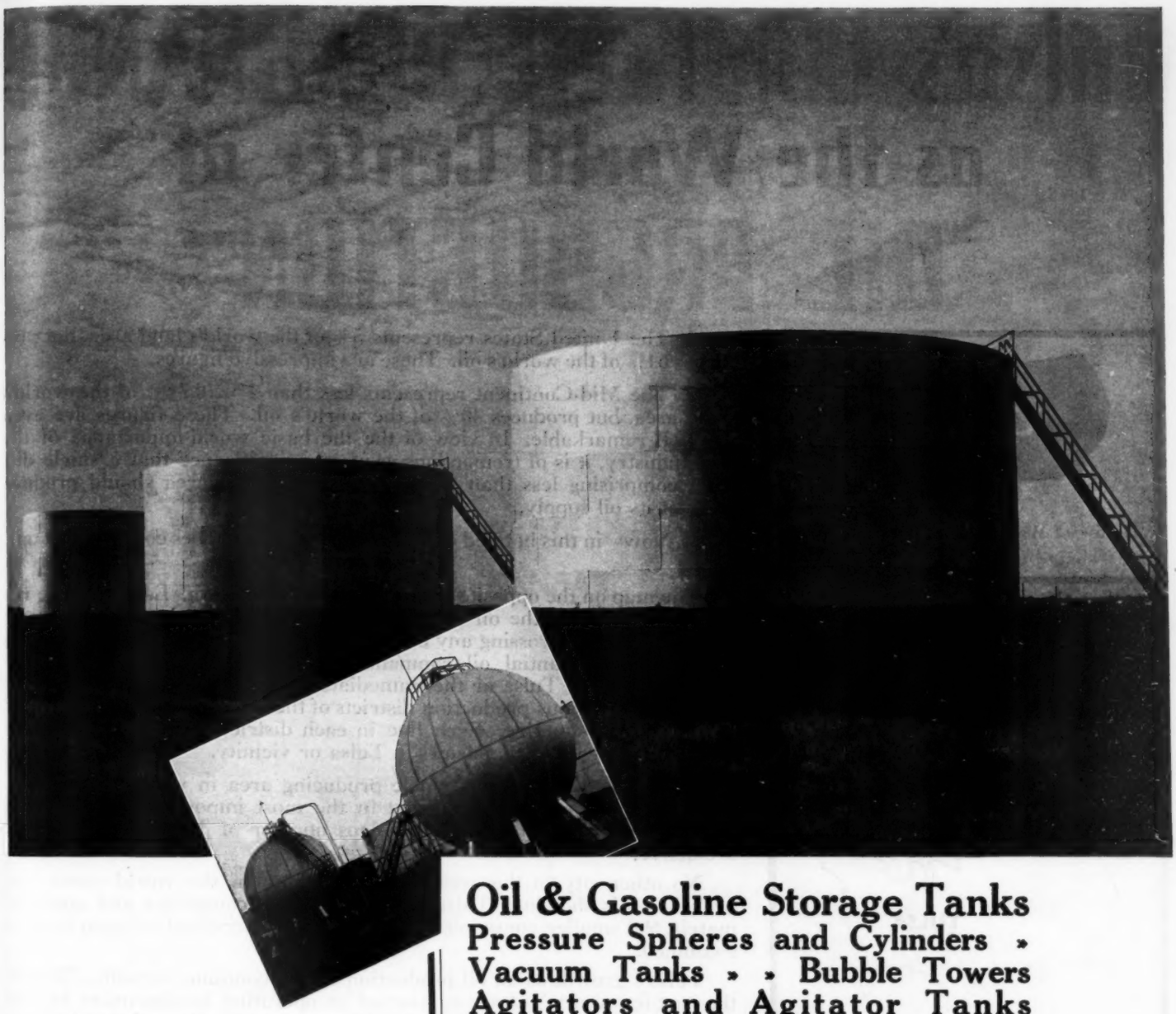
[5]Graphic Analysis of Natural Gasoline, L. A. Pocock and M. G. Blair, National Petroleum News, 5-18-32.

Battery of New Stabilizing Units



New equipment installed in the Port Arthur, Texas refinery of The Texas Co.



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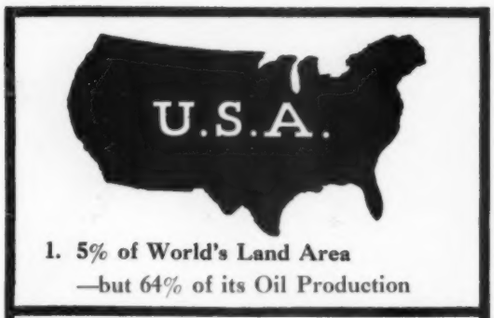
NEW YORK ---------- Room 980—270 Broadway
CHICAGO ---------- 1202 First National Bank Building
SAN FRANCISCO ---------- 603 Rialto Building

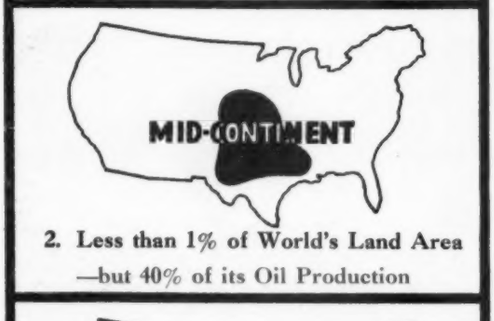
Fabricating Plants:

Pittsburgh Des Moines

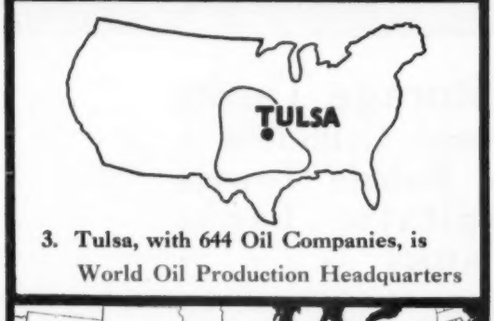
Tulsa's COMPLETE DOMINANCE as the World Center of OIL PRODUCTION



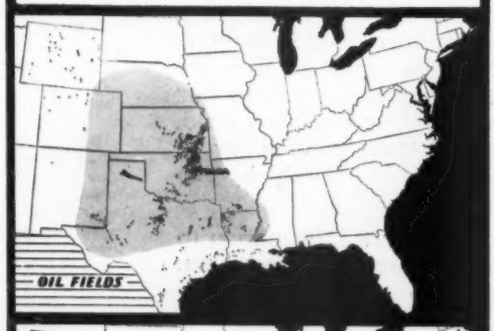
1. 5% of World's Land Area
—but 64% of its Oil Production



2. Less than 1% of World's Land Area
—but 40% of its Oil Production



3. Tulsa, with 644 Oil Companies, is
World Oil Production Headquarters



1. The United States represents 5% of the world's land area, but produces 64% of the world's oil. These are impressive figures.

2. The Mid-Continent represents less than 1% (0.7%) of the world's land area, but produces 40% of the world's oil. These figures are even MORE remarkable. In view of the the basic world-importance of the Oil Industry, it is of tremendous economic significance that a single district comprising less than 1% of the world's land area should produce 40% of its oil supply.

3. Now—in this hot-bed of oil production, where does control head up?

* * * * * * *

The map on the opposite page answers this question. Each red line refers exclusively to the oil district in which it lies, and is not a continuation of a red line crossing any other district. These red lines indicate the number of substantial oil companies having their production HEADQUARTERS in Tulsa or the immediate Tulsa area, which are operating in these various production districts of the Mid-Continent, Gulf Coast and Rocky Mountains. Each line in each district represents a producing company with headquarters in Tulsa or vicinity.

Note that there is not a single producing area in which Tulsa companies are not operating, and that in the most important sections, like East Texas and Seminole, a tremendous number of Tulsa oil companies are active.

No other city in the area here shown—or in the world—even approaches this showing. Tulsa has 44 major oil companies and approximately 600 smaller companies—more than all other Southwestern centers combined.

Tulsa's growth as an oil production center continues steadily. Within the past few years Tulsa was selected as operating headquarters by the Consolidated (Sinclair-Prairie) Oil Corporation, the Stanolind Oil & Gas Company made Tulsa the headquarters of its various subsidiaries formerly located in Shreveport, Fort Worth and Casper, the Tidewater Oil Company moved its production headquarters from New York to Tulsa, and the Mid-Continent Division of the Shell Petroleum Corporation was centralized at Tulsa.

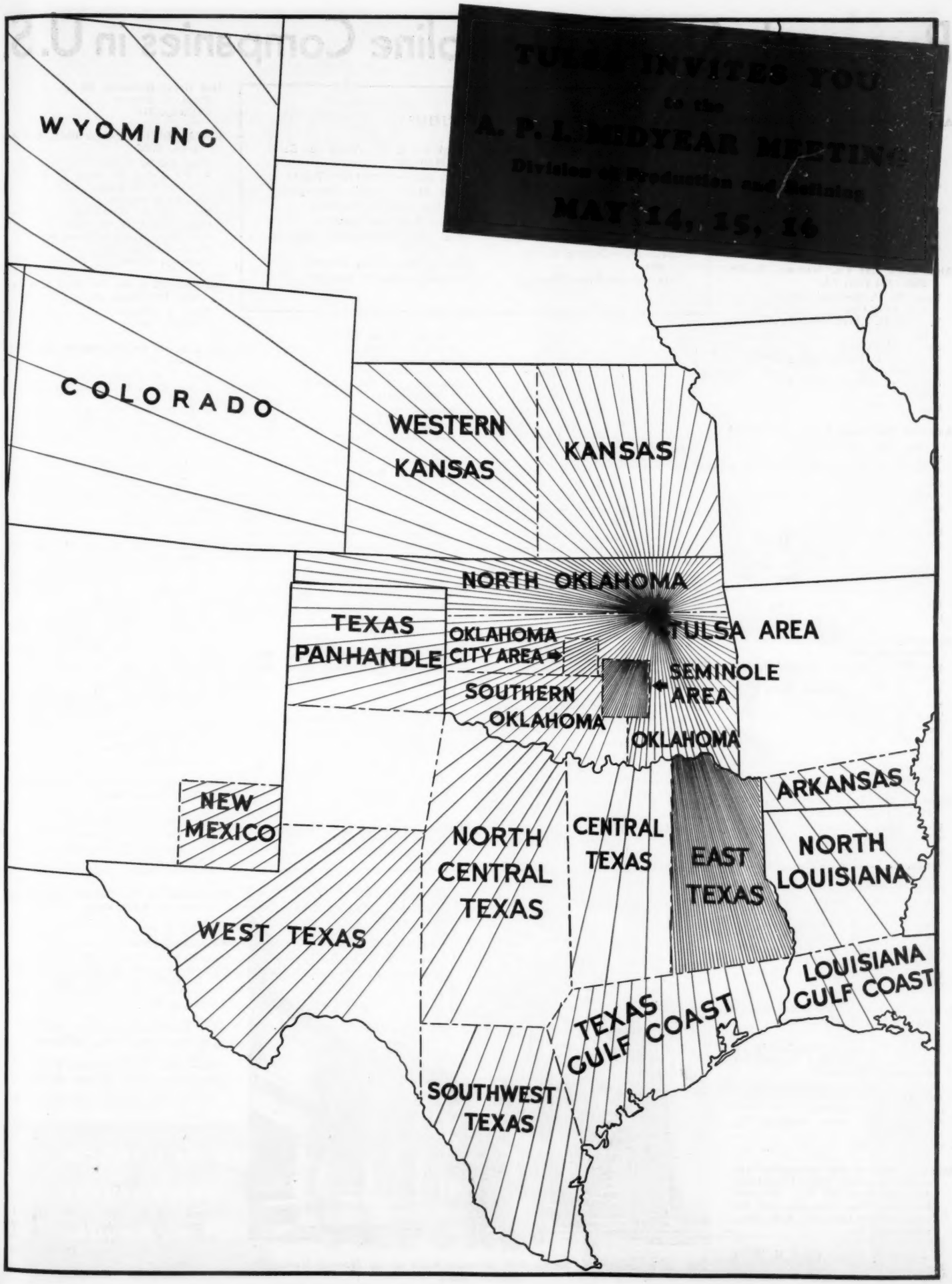
Map 4, at left, shows Tulsa's central position with relation to the oil fields of the Mid-Continent, Gulf Coast and Rocky Mountains. Map 5 shows how Tulsa is the hub of the nation's great system of oil pipe lines. Much of the control of this great system is centered at Tulsa.

* * * * * * *

The purchasing of equipment and supplies for all of the companies indicated on the map at right, is controlled in the immediate Tulsa district. The manufacturer of oil equipment or supplies considering a branch office or warehouse in the Southwest, should investigate the facts about Tulsa. The Tulsa Chamber of Commerce will be glad to answer questions and to prepare detailed reports.

TULSA

Oil Capital of the World


WYOMING
COLORADO
WESTERN KANSAS
KANSAS
NORTH OKLAHOMA
TULSA AREA
TEXAS PANHANDLE
OKLAHOMA CITY AREA
SEMINOLE AREA
SOUTHERN OKLAHOMA
OKLAHOMA
ARKANSAS
NEW MEXICO
NORTH CENTRAL TEXAS
CENTRAL TEXAS
EAST TEXAS
NORTH LOUISIANA
WEST TEXAS
LOUISIANA GULF COAST
TEXAS GULF COAST
SOUTHWEST TEXAS

Personnel of Natural Gasoline Companies in U. S.

A

Airolene Gasoline Corp., 723 Kennedy Bldg., Tulsa, Okla.
Pres., Forrest E. Gilmore
V. P., Carl W. Gilmore
Sec.-Treas., H. O. Whitfield
Gen. Supt. and Pur. Agt., Carl W. Gilmore
Supt., Jess Patterson, Box 772, Shamrock, Tex.
Plant in Texas
Capacity, 8,000

Alum Rock Gas Co., National Transit Bldg., Oil City, Pa.
Pres., R. P. Stevens, 120 Broadway, New York City
V. P., J. H. Isherwood, Port Allegany, Pa.
Sec., J. C. Forsyth
Treas., C. R. Beddows, 120 Broadway, New York City
Supt., Roy Klinger, Knox, Pa.
Plant in Pennsylvania
Capacity, 200

Amerada Petroleum Corp., 120 Broadway, New York City
Pres., A. Jacobsen
V. P., A. M. Blow
Sec., Robert Nock
Treas., E. P. Potter
Gen. Supt., M. E. Mockly
Pur. Agt., E. A. Cook
Ch. Egr., H. W. Harts
Supts., F. E. Thompson, Drawer C, Fry, Tex.; J. W. Kearney, Box 686, Healdton, Okla.; L. D. Parker, Box 37, Harjo, Okla.; I. N. Journeycake, R.F.D. 8, Oklahoma City, Okla.
Plants in Oklahoma and Texas
Capacity, 82,000

American Natural Gasoline Co., Box 426, Shamrock, Okla.
Pres., W. K. Warren, National Bank of Tulsa Bldg., Tulsa, Okla.
V.P.s, Wilson Dye, W. D. Smith
Sec., H. E. Felt, Tulsa, Okla.
Treas., J. A. La Fortune, Tulsa, Okla.
Supt., W. D. Smith
Asst. Supt., S. S. Allender
Capacity, 60,000
Half interest owned by Warren Petroleum Co.

American Oil Development Co., 1601 Oliver Bldg., Pittsburgh, Pa.
Pres., Harry S. Tack
V. P. and Gen. Mgr., Theodore E. Tack
Sec., Willis Siegfried
Treas., A. V. Tack
Gen. Supt., John Petty
Supts., G. H. Hayes, Box 125, Robinson, Ill.; S. E. Hoover, Middlebourne, W. Va., M. T. Hooper, St. Marys, W. Va.; G. G. Morgan, Meadeville, W. Va., J. H. Petty, Fly, Monroe County, Ohio; H. G. Bradfield, R.F.D. 2, New Matamoras, Ohio
Plants in West Virginia and Illinois
Capacity, 1,400

Arab Gasoline Corp., Exchange National Bank Bldg., Eastland, Tex.
Pres., Samuel Butler
V. P., P. T. Sharples, Philadelphia, Pa.
Sec.-Treas., W. E. Cox, Philadelphia, Pa.
Gen Supt., Franklin Dwyer
Pur. Agt., R. L. Allen
Ch. Egr., W. E. Coleman
Supt., Franklin Dwyer, Eastland, Tex.
Plant in Texas
Capacity, 25,000

Arkansas Natural Gas Companies (including Arkansas Natural Gas Corp., Arkansas Fuel Oil Co., Arkansas-Louisiana Pipe Line Co., and Rodessa Natural Gas Co.), Ardis Bldg., Shreveport, La.
Pres., H. L. Doherty
V. P.s, D. W. Harris and J. R. Munce
Sec., T. J. Heard
Treas., B. R. Muirhead
Gen. Supt., A. H. Weyland
Ch. Egr., H. T. Goss
Pur. Agt., J. Lucas
Supt. Gaso. Div., E. P. Farmer
Supts., V. Zeppa, Exchange Bldg., El dorado, Ark.; L. A. Clements, Box 668, Homer, La.; J. P. Smithson, Rodessa, La.
Plants in Louisiana, Arkansas and Illinois
Capacity, 35,000

B

Bankline Oil Co., 634 S. Spring St., Los Angeles, Calif.
Pres., John Barneson
V. P., H. J. Barneson, Los Angeles
Sec.-Treas., W. E. Kropp
Gen. Mgr., L. L. Aubert
Pur. Agt., H. M. Paulsen
Supt., L. J. Patrosso, Box 6203, Signal Hill, Calif.
Plant in California
Capacity, 25,000

Barbary & Hardt, Wildwood, Pa.
Plant in Pennsylvania
Capacity, 11

Barnsdall Oil Co. of California, Petroleum Securities Bldg., Los Angeles, Calif.
Pres., R. A. Broomfield
V. P.s, E. M. Skeehan, E. B. Reeser, James A. Dunn, W. C. Whaley, R. A. Broomfield, Jr.
Sec., James A. Dunn
Treas., E. C. Reed
Gen. Supt., O. Weaver
Pur. Agt., C. E. Good
Supt., R. L. Fortune, P. O. Box 88, Golet, Calif.
Ch. Egr., R. B. Hastings
Plant in California
Capacity, 65,000

Barnsdall Oil Co., Petroleum Bldg., Tulsa, Okla.
Pres., E. B. Reeser
V. P., D. R. Snow
Sec., James A. Dunn
Treas., L. D. Messner
Gen. Supt., A. J. Schlosser
Sales Mgr., George Locke
Pur. Agt., O. E. McClatchey
Ch. Engr., H. W. Manley
Supts., J. O. Green, Box 518, Earlsboro, Okla.; A. H. Saylor, Box 856, Beggs, Okla.; G. R. Nicholas, Box 228, Osage, Okla.; E. E. Troyer, Box 224, Avant, Okla.; D. J. Snyder, Route 8, Tulsa, Okla.; F. C. Goughler, Route 1, Barnsdall, Okla.; R. W. Shannon, Route 2, Box 173, Oxford, Kans.
Plants in Oklahoma and Kansas
Capacity, 21,900

Bartlett Gasoline Co., 313 Wright Bldg., and 1801 Exchange Bank Bldg., Tulsa, Okla.
Pres., J. H. McCoy
V. P., Dean E. Foster
Sec.-Treas., H. R. Johnson
Gen. Supt., Dean E. Foster
Sales Mgr., A. J. Pfister
Pur. Agt., Dean E. Foster
Supt., E. W. Mellings, Box 467, Butler, Okla.
Plant in Oklahoma
Capacity, 14,000

Bayliss and Fasenmeyer, Titusville, Pa.
Plant in Pennsylvania
Capacity, 1,000

Bell Bros., Robinson, Ill.
Plants in Illinois
Capacity, 310

Belridge Oil Co., Edison Bldg., Los Angeles, Calif.
Pres., Burton E. Green
V. P.s, Frank H. Buck, H. L. Westbrook, F. B. Fulton
Sec., F. B. Sutton
Treas., W. L. Westbrook
Gen. Supt., C. E. Coleston
Pur. Agt., W. C. Wickersham
Plants in California
Capacity, 67,000

Big Four Oil & Gas Co., Boyd & Watson Sts., Pittsburgh, Pa.
Plant in Illinois
Capacity, 300

Big Lake Oil Co., 223 Fourth Ave., Pittsburgh, Pa.
Pres., J. G. Farquhar
V. P.s, Chas. E. Beyer, W. S. Hallanan
V. P. and Gen. Mgr., A. B. Dally, Jr.
Sec.-Treas., W. E. Huston
Gen. Supt., C. R. Johnson, Texon, Tex.
Pur. Agt., R. E. Johnson
Ch. Chem., J. C. Moore
Ch. Egr., A. G. Stell
Supt., C. C. Hickle, Texon, Tex.
Plant in Texas
Capacity, 50,000

Bolsa Chica Oil Corp., 707 Richfield Bldg., Los Angeles, Calif.
Pres., William Ford
V. P. and Gen. Mgr., C. W. Lord
V. P., S. A. Reed
Sec., E. Ord Slater
Treas., S. A. Reed
Gen. Supt., F. J. Shaver
Pur. Agt., E. C. Ashe
Plants in California
Capacity, 21,000 (shut down)

Brea Canon Oil Co., 831 Standard Oil Bldg., Los Angeles, Calif.
Pres., Dan Murphy
Sec., G. Holterhoff, Jr.
Plant in California
Capacity, 14,000

Breckenridge Gasoline Co., 2313 Madison Ave., Toledo, Ohio
Pres., A. S. Hickok
V. P., Walter G. Kirkbride
Sec.-Treas., C. F. Eisenhour
Gen. Supt., R. L. Ponsler
Plant in Texas
Capacity, 7,000

Brenneman & MacDonnell, 312 South Cole St., Lima, Ohio
Gen. Supt., E. R. Perfect
Plants in Illinois
Capacity, 1,250

Buckeye Natural Gasoline Corp., 504 E. Archer St., Tulsa, Okla.
Pres., Charles C. Cartwright, Fort Worth, Tex.
V. P., A. V. B. Candler
Sec. and Treas., James T. Neal
Gen. Supt., E. C. Smith, Magic City, Tex.
Sales Mgr., H. G. Trimble, Tulsa
Ch. Chem., H. S. Wilson, Magic City, Tex.
Ch. Egr., R. B. McQuiddy, Magic City, Tex.
Pur. Agt., H. E. Heywood
Supt., E. C. Smith, Magic City, Tex.
Plants in Texas
Capacity, 15,000

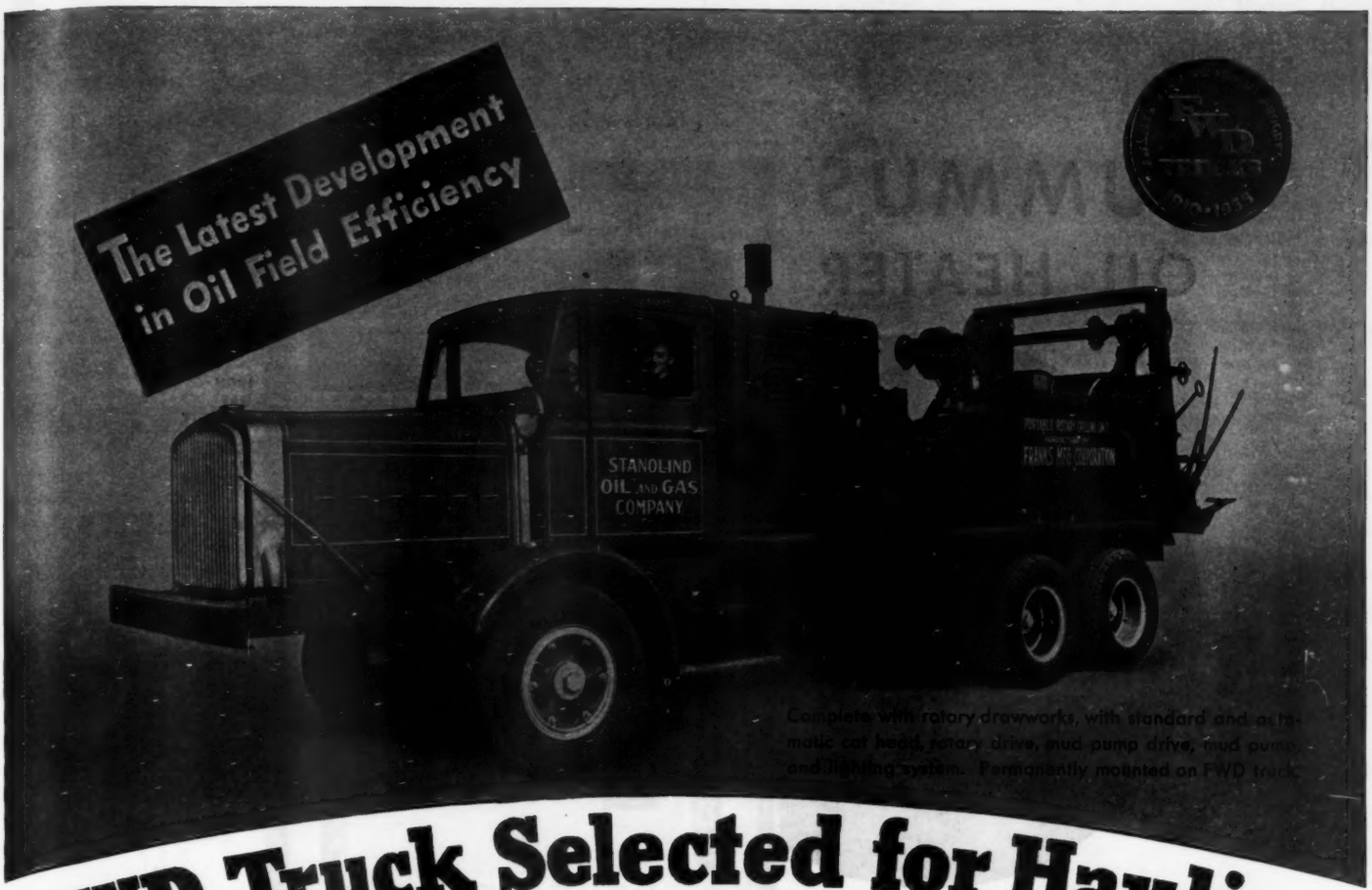
C

Calumet Oil Co., 517 I. W. Hellman Bldg., Los Angeles, Calif.
Pres., J. E. Wallis
V. P., T. H. Collins, H. Browning Landes
Sec.-Treas., W. F. Staunton

ABBREVIATIONS:

Chm. Bd.—Chairman of Board
Pres.—President
V. P.—Vice President
Sec.—Secretary
Treas.—Treasurer
Gen. Mgr.—General Manager
Gen. Supt.—General Superintendent
Sales Mgr.—Sales Manager
Tank Car S. M.—Tank Car Sales Manager
Pur. Agt.—Purchasing Agent
Traf. Mgr.—Traffic Manager
Ch. Egr.—Chief Engineer
Supt.—Superintendent
Asst. Supt.—Assistant Superintendent
Ch. Chem.—Chief Chemist
Capacity—gallons per day

Part of a battery of "Series 600" pressure units at the Marcus Hook, Pa. Sinclair plant



Complete with rotary drawworks, with standard and automatic cat head, rotary drive, mud pump drive, mud pump and lighting system. Permanently mounted on FWD truck.

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The FWD truck is an important part of this revolutionary equipment. Hundreds of FWD trucks serving for many years in the oil fields have earned for the FWD the reputation of being able to get to location regardless of road conditions. Their sturdy construction and true application of the four-wheel drive principle have made them especially acceptable for hauling oil well cementing equipment, spudding devices, winches, and general hauling.

Recent purchasers of FWDs in oil service are: The American Oil Company—Dowell, Incorporated—Halliburton Oil Well Cementing Co.—Perkins Oil Well Cementing Co.—Sam Schneider Oil Co.—Shock Independent Oil Company—Socony-Vacuum Corporation—Standard Oil Co. (Indiana)—Standard Oil Co. (New Jersey)—Standard Oil Co. (New York) — and the Stanolind Oil & Gas Company.

Why not have the FWD engineers work with you on YOUR problem? Write to the factory or the FWD Sales Company of Duncan, Oklahoma.

Two more FWDs owned by Stanolind Oil and Gas Company. Here again this company is making full use of the definite advantages of FWD trucks. One is *Greater Dependability of Service.* Reserve power, rugged construction throughout, and true application of the four-wheel drive principle, insure continuous operation. Backed by an international service system available at a moment's notice. Another is *Wider Range of Operation.* Balanced four-wheel traction enables the FWD to handle its regular hauling job easily and do the tough jobs as a matter of course. There are many other advantages.

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THE FOUR WHEEL DRIVE AUTO COMPANY,
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Canadian Factory: Kitchener, Ontario

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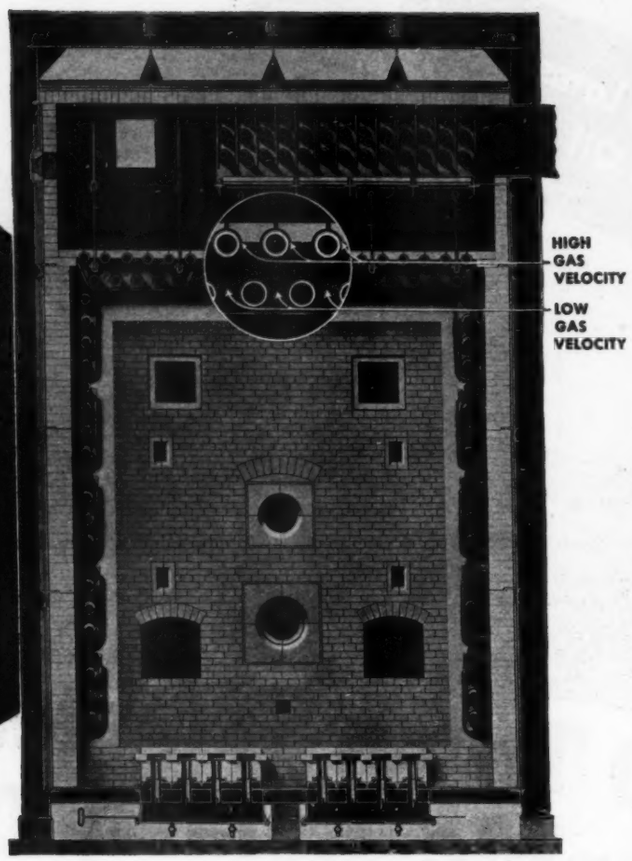
Title_____

Address_____

City_____ State_____

LUMMUS
OIL HEATER

Gases are removed
UNIFORMLY
over the
entire roof area



In the Lummus Oil Heater the flue gases are removed from the radiant section over the entire area of the roof tubes.

The lower row roof tubes are spaced on large centers. The large free area between these tubes provides a very low velocity to the flue gas so that convection heat transfer is negligible.

To assure this uniform low velocity over the roof tubes exposed to direct radiation and to prevent channelling of the gases, a diffusion baffle is provided over the roof tubes.

Besides reducing the transfer of heat by radiation to the lower row of roof tubes, the second row of roof tubes acts as the diffusion baffle or the baffle support. The use of the second row of tubes for baffling, maintains a low uniform gas velocity over the entire area of the roof tubes and provides surface in the second row exposed to high gas velocity with a consequent high convection heat transfer.

In this manner the combined high heat transfer due to radiation and convection is eliminated on the first tubes in the convection section of the heater.

Write for 12 page technical bulletin describing Lummus Oil Heater.

THE LUMMUS COMPANY · 50 CHURCH STREET, NEW YORK, N. Y.

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PETROLEUM REFINING PLANTS

Gen. Supt., J. C. Armstrong
Pur. Agt., Irene Trelease
Plant in California
Capacity, 900

Canadian River Gas Co., Colorado Springs, Colo.
Pres., N. K. Moody, Tulsa, Okla.
V. P.s, P. C. Spencer, A. R. Jones
Sec., A. W. Heinemann
Treas., O. O. Holmgren
Gen. Mgr., Ford, Bacon & Davis, Inc.
Gen. Supt., G. A. Woods, Gas Bldg., Amarillo, Tex.
Supt., W. A. Skinner, Gas Bldg., Amarillo, Tex.
Plant in Texas
Capacity, 30,000

Cannon Gasoline Co., Commerce Bldg., Amarillo, Tex.
Pres., J. J. Hastings
V. P., F. J. Storm
Sec., J. B. Dooley
Treas., F. J. Storm
Plant in Texas
Capacity, 5,000

Carbide & Carbon Chemicals Corp., 30 E. Forty-second St., New York City
Pres., J. A. Rafferty
V. P.s, G. O. Curme, Jr., R. W. White, H. E. Thompson, J. W. McLaughlin, J. G. Davidson
Sec., A. C. Cornell
Treas., C. T. Ayres
Sales Mgr., W. F. Reich, Jr.
Gen. Supt., J. M. Topham
Ch. Chem., G. V. Scofield
Pur. Agt., W. F. Ackerman
Ch. Egr., C. S. Dunn
Supts., C. M. Stuter, Hastings, W. Va.; T. R. Ragland, Jr., Diamond, W. Va.
Plants in West Virginia
Capacity, 3,500

Cargray Corp., Amarillo Bldg., Amarillo, Tex.
Pres., Vernon F. Taylor
V. P.s, D. D. Harrington, Stanley Marsh, L. R. Hagy
Sec.-Treas., E. D. Timberlake
Gen. Supt., F. M. Neely, Pampa, Tex.
Ch. Chem., W. D. McDonald
Pur. Agt., D. D. Harrington
Plant in Texas
Capacity, 100,000

Carter Oil Co., National Bank of Tulsa Bldg., Tulsa, Okla.
Pres., C. H. Lieb
V. P., George H. Long
Sec., James A. Veasey
Treas., C. D. Mill
Gen. Supt., G. E. Edgett
Sales Mgr., H. F. Miller
Pur. Agt., J. R. Freedman
Ch. Egr., C. D. Watson
Supts., A. E. Perry, Box 997, Seminole, Okla.; W. T. Mills, Box 787, Wilson, Okla.; F. W. Bruner, Box 7, Carter Nine, Okla.
Plants in Oklahoma
Capacity, 103,000

Casto Oil Co., 318½ Juliana St., Parkersburg, W. Va.
Partnership of Ira Williams and Ross Wells
Gen. Supt., Ira Williams
Supt., L. O. Alkire, Arvilla, W. Va.
Plant in West Virginia
Capacity, 250

Chambers Oil Co., 214 Chambers Bldg., Oil City, Pa.
Plant in Pennsylvania
Capacity, 150

Clinger Oil & Gas Co., Tidioute, Pa.
Pres., A. V. Clinger
V. P., George Clinger
Pur. Agt. and Treas., W. F. Clinger
Supts., C. R. Boyd, Truemans, Forest County, Pa.; J. E. Peterson, R.F.D. 3, Tidioute, Pa.
Plants in Pennsylvania
Capacity, 1,000

Clymore Co., Inc., 604 Mixor Bldg., Corpus Christi, Tex.
Pres., Garland Clymore
V. P., W. L. Pearson
Sec.-Treas., Ralph B. Harrison
Gen. Supt., R. S. Wyrick
Pur. Agt., W. L. Pearson
Ch. Chem., V. A. Goss
Ch. Egr., J. R. Wilson
Plant in Texas
Capacity, 30,000

Cockran (John G.) & Co., 676 W. Main St., Sheffield, Pa.
Owner and operator, John G. Cockran
Supt., J. C. Curtin, Barnes, Pa.
Plant in Pennsylvania
Capacity, 1,100

C. J. Coffin, Chicora, Pa.
Owner and operator, C. J. Coffin
Supts., C. W. Miller, Route 1, Karns City, Pa.; George Work, Route 2, Chicora, Pa.
Plants in Pennsylvania
Capacity, 170

Coline Gasoline Corp., Kerckhoff Bldg., Los Angeles, Calif., or Tradesmen Bank Bldg., Oklahoma City, Okla.
V. P.s, H. L. Briggs, Oklahoma City; F. C. Ripley, Los Angeles, Calif.
Sec., C. W. Sowle, Oklahoma City
Treas., J. W. Price, Oklahoma City
Supts., Harold Moulton, Kerckhoff Bldg., Los Angeles; L. J. Gude, Oklahoma City
Plants in Oklahoma and California
Capacity, 41,000

Coltexo Corp., Monroe, La.
Pres., F. F. Curtze, Erie, Pa.
V. P., Edwin Bunney, New York City
V. P. and Sec., Reid L. Carr, New York City
Treas., G. L. Bubb, New York City
Gen. Supt., H. H. Reardon
Sales Mgr., W. H. Anders
Ch. Chem., H. J. Hunter
Ch. Egr., A. T. Givens
Supt., J. P. Cox, Lefors, Tex.; H. E. Means, Lefors, Tex.; W. R. Wise, Lefors, Tex.; E. D. Nolan, Lefors, Tex.; W. E. Reardon
Plants in Texas
Capacity, 70,000

Columbian Gasoline Corp., Monroe, La.
Pres., F. F. Curtze, Erie, Pa.
V. P. and Sec., Reid L. Carr, New York City
Treas., George L. Bubb
Gen. Supt., H. H. Reardon
Sales Mgr., W. H. Anders
Ch. Chem., H. T. Hunter
Ch. Egr., A. T. Givens
Supts., W. E. Reardon; R. A. Boyd, Fairbanks, La.; J. S. Dunn, Swartz, La.; J. F. Morris, R.F.D. 2, Bastrop, La.; B. F. Spigenor, Fairbanks, La.; R. E. Biggs, R.F.D. 1, Rayville, La.; G. W. Ross, Shamrock, Tex.
Plants in Texas and Louisiana
Capacity, 16,000

Continental Oil Co., Ponca City, Okla.
Pres., D. J. Moran
V. P.s, W. W. Bruce, E. S. Karstedt, J. G. Dyer
Sec., James J. Cosgrove
Treas., G. F. Smith
Gen. Supt., D. C. Williams
Asst. Supt., J. L. Hill
Sales Mgr., H. J. Kennaday
Pur. Agt., W. H. O'Conner
Ch. Chem., B. H. Lincoln
Ch. Egr., M. E. Clawson
Supts., R. A. Carter, Columbine, Wyo.; Chas. R. Allen, Wellington, Colo.
Plants in Oklahoma, Texas, Colorado, Wyoming and New Mexico
Capacity, 148,500. Six of 10 plants listed operated in conjunction with other companies as shown under respective states.

Consolidated Gasoline Co., 2313 Madison Ave., Toledo, Ohio
Pres., A. S. Hickok
V. P., Walter G. Kirkbride
Sec.-Treas., C. F. Eisenhour
Gen. Supt., R. L. Ponsler, Box 488, Eastland, Tex.
Supt., W. J. Polk, Box 897, Breckenridge, Tex.
Pur. Agt., H. M. Condley, Eastland, Tex.
Plants in Texas
Capacity, 12,000

Cook Oil Lease, Kelletville, Pa.
Owner, E. S. Collins, Portland, Ore.
Mgr., F. R. Klinestiver, Nebraska, Pa.
Sec., James E. Flynn
Ch. Egr., F. Lee Dunkle, Mayburg, Pa.
Plant in Pennsylvania
Capacity, 300

Cowan Oil & Refining Co., Cowan Bldg., Spring St., Los Angeles, Calif.
Pres., John A. Arnold
Sec.-Treas., W. G. Howard
Plant in California
Capacity, 10,000

J. E. Crosbie, Inc., National Bank of Tulsa Bldg., Tulsa, Okla.
Pres., J. E. Crosbie
V. P., W. B. Moran
Sec., M. E. Church
Treas., C. H. Sweet
Pur. Agt., A. W. Dwen
Supts., D. B. Young, Box 1795, Holdenville, Okla.; J. Y. Seward, Box 158, St. Louis, Okla.; S. M. Barrett, Box 425, Okemah, Okla.; E. K. Crosbie, Lovell, Okla.
Plants in Oklahoma
Capacity, 76,000

Crosbie, Porter & Martin, Box 625, Okemah, Okla.
Plant in Oklahoma
Capacity, 20,000

D

Daugherty & Co. (C. R.), Y. M. C. A. Bldg., Butler, Pa.
Partnership, C. R. Daugherty and M. G. Daugherty
Plants in Pennsylvania
Capacity, 125

Del Rey Oil & Gas Co., Washington St. and Beach Ave., Venice, Calif.
Pres., A. E. Schiltz
V. P., F. A. E. Lowell
Asst. Sec., H. A. Wohlenberg
Ch. Chem., A. Pfeil
Ch. Egr., J. P. Magee
Supt., L. C. Vincent
Plant in California
Capacity, 75,000

Dempseytown Gas Co., 103 Will St., Port Allegany, Pa.
Pres., C. I. Crippen, 30 Broad St., New York City
V. P.s, J. H. Isherwood, Port Allegany, Pa.; G. A. Crosby, 30 Broad St., New York City
Sec., J. C. Forsyth, 30 Broad St., New York City
Treas., C. R. Beddows, 30 Broad St., New York City
Supt., H. K. Dietterick, Knox, Pa.
Plants in Pennsylvania
Capacity, 300

Devonian Oil Co., 1705 National Bank of Tulsa Bldg., Tulsa, Okla.
Pres., J. H. Evans
V. P.s, A. W. Leonard, L. C. Ritts
Sec., G. D. Foster
Treas., L. C. Ritts
Supts., E. S. Calvert, Box 57, Overton, Tex., C. C. Woodson, Box 106, Kelleyville, Okla.
Pur. Agt., H. R. Dean
Plants in Oklahoma
Capacity, 30,000

Dinsmoor & Co., 702 Second St., St. Marys, W. Va.
Pres., J. D. Dinsmoor
V. P.s, L. E. Dinsmoor, Marietta, Ohio; F. K. Sellers
Sec.-Treas., W. P. Kerwood, Jr.
Supt., D. H. Israel, St. Marys, W. Va.
Plants in West Virginia
Capacity, 346

Dunlap, Harry G., Chicora, Pa.
Plants in Pennsylvania
Capacity, 11

E

Eagle-Picher Mining & Smelting Co., 214 West Third St., Joplin, Mo.
Pres., A. E. Bendelari, Cincinnati, Ohio
V. P.s, G. W. Potter, Joplin, Mo.; F. W. Potts, Cincinnati, Ohio
Sec.-Treas., Joseph Hummel, Jr., Cincinnati, Ohio
Gen. Supt., D. C. MacKollor, Picher, Okla.
Supt., W. N. Corbet, Henryetta, Okla.
Plant in Oklahoma
Capacity, 3,000

Eason Oil Co., Bass Bldg., Enid, Okla.
Pres., T. T. Eason
V. P., L. D. Hinman
Sec.-Treas., T. W. Eason
Gen. Supt., A. W. Lindley
Sales Mgr., R. H. Rowland
Pur. Agt., A. C. Hatton
Ch. Chem., G. B. Lyons
Ch. Egr., W. H. Taft
Supts., T. E. Sisk, Box 517, Covington, Okla.; B. T. Weidner, Crescent, Okla.; P. G. Maranville, Enid, Okla.
Plants in Oklahoma
Capacity, 31,000

Edington Gasoline & Refining Co., Inglewood, Calif.
Pres., C. B. Edington
Plant in California
Capacity, 6,000

Eddie O. Edwards, R.F.D. 2, Titusville, Pa.
Plant in Pennsylvania
Capacity, 170

Elswerth-Hefren & Co., Lucinda, Pa.
Pres., F. M. Baker
V. P., W. J. Ochs
Sec.-Treas., J. F. Elswerth
Plant in Pennsylvania
Capacity, 400

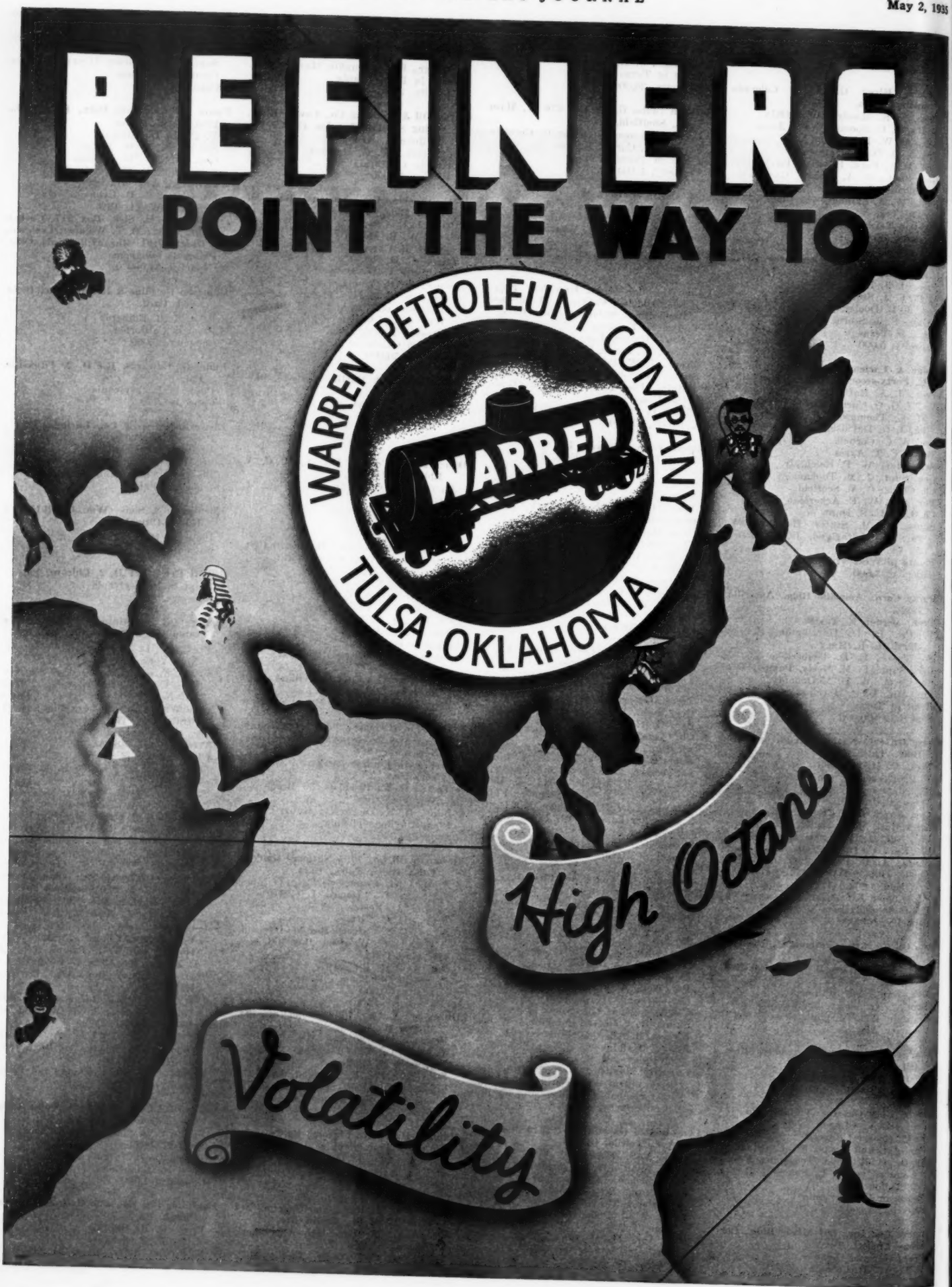
Ellenberger & Sons (Wm. J.), R.F.D. 1, Karns City, Pa.
Plant in Pennsylvania
Capacity, 300

Elliott Bros., R.F.D. 2, Chicora, Pa.
Plant in Pennsylvania
Capacity, 500

Empire Oil & Refining Co., Empire-Masonic Bldg., Bartlesville, Okla.
Pres., H. L. Doherty, 60 Wall St., New York City
V. P.s, F. R. Coates, 60 Wall St., New York City; H. D. Frueauff, 60 Wall St., New York City; W. A. Jones, 60 Wall St., New York City; H. R. Straight, A. W. Ambrose
Sec., C. E. Murray
Treas., R. L. Morton, Jr.
Div. Mgr., E. L. Leck
Supervisors, H. A. Ells, E. L. Stauffacher
Sales Mgr., S. B. Crooks
Pur. Agt., G. A. Tompson
Supts., L. A. Webster, Madison, Kans.; E. Williams, R.F.D. Teter, Hamilton, Kans.; R. W. Johnston, Tallant, Okla.; W. H. Tillock, Route 2, Wanette, Okla.; P. J. Phillips, Drawer "T", Konawa, Okla.; E. R. Estus, Box 395, Seminole, Okla.; C. F. Fischer, Box 1205, Seminole, Okla.; J. F. Hodge, Route 1, Box 600, Seminole, Okla.; J. A. Dowler, Box 2093, Wichita, Kans.; V. F. Hobart, Box 1742, Pampa, Tex.; J. L. Sperry, Box 1328, Wewoka, Okla.; D. G. Thoes, Box 498, Burrton, Kans.
Dist. Supts., Dick Rodgers, Box 2093, Wichita, Kans.; J. W. Wilson, Box 1205, Seminole, Okla.
W. H. Tillock, R.F.D. 2, Wanette, Okla.; V. F. Hobart, Box 1686, Pampa, Tex.
Plants in Oklahoma, Kansas and Texas
Capacity 297,500

Enfisco Oil Corp., Box 2021, Tulsa, Okla.
Pres., Edward N. Fisher
V. P.s, S. S. Smith, J. F. Dittman
Sec., M. Jerome
Treas., L. J. Margulies
Plant in Oklahoma
Capacity, 1,500

Equitable Gas Co., 435 Sixth Ave., Pittsburgh, Pa.
Pres., F. R. Phillips
V. P., F. F. Schauer
V. P. Chg. Sales, Joseph McKinley
Gen. Supt., Judson Bonsall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WARREN
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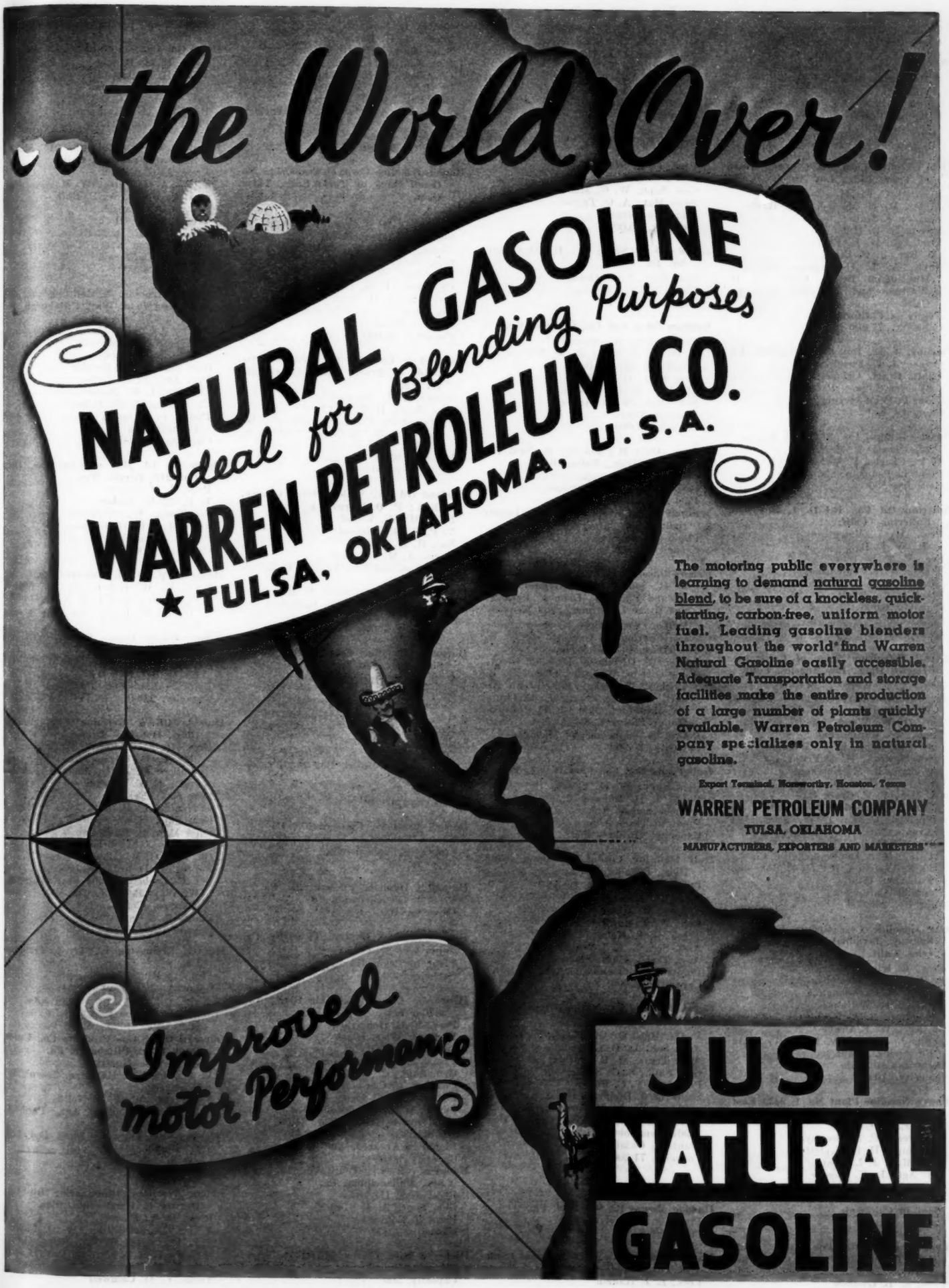
High Octane
Volatility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The motoring public everywhere is learning to demand natural gasoline blend, to be sure of a knockless, quick-starting, carbon-free, uniform motor fuel. Leading gasoline blenders throughout the world find Warren Natural Gasoline easily accessible. Adequate Transportation and storage facilities make the entire production of a large number of plants quickly available. Warren Petroleum Company specializes only in natural gasoline.
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Improved motor Performance
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NATURAL
GASOLINE

Sec., W. B. Carson
Treas., C. J. Braun, Jr.
Oper. Mgr., D. P. Hartson
Pur. Agt., C. W. Lepper
Supt., G. M. Myers, Rogersville, Pa.; P. E. Jackson R.F.D. 1, Clarksville, Pa.
Plants in Pennsylvania
Capacity, 12,000

F

Field Gasoline Corp. (O. C.), 609 Board of Trade Bldg., Los Angeles, Calif.
Pres., O. C. Field
V. P.s, W. G. Metson, J. C. Burks
Sec., N. J. Hale
Treas., R. B. Hale
Pur. Agt., H. E. Everett
Ch. Egr., J. C. Burks
Supt., A. L. Henrickson, Box 211, Huntington Beach, Calif.; I. H. Westmoreland, Box 832, Maricopa, Calif.
Plants in California
Capacity, 77,000

Fleming, J. E., Box 606, Titusville, Pa.
Owner, J. E. Fleming
Supt., B. H. Crippen, Grand Valley, Warren County, Pa.
Plant in Pennsylvania
Capacity, 500

Forest Chemical Co., Sheffield, Pa.
Pres., Charles R. McNeal
V. P., Charles F. McNeal
Plant in Pennsylvania
Capacity, 500

Fullerton Oil Co., R.F.D. 1, Box 456, Fullerton, Calif.
Pres., W. L. Valentine
V. P., W. F. Ball
Sec., V. T. Severns
Treas., W. L. Valentine
Gen. Supt., E. H. Adams
Plant in California
Capacity, 6,000

G

General Petroleum Corp. of California. Higgins Bldg., Los Angeles, Calif.
Pres., A. L. Weil
V. P.s, R. A. Sperry, S. J. Dickey, W. L. McLaine, A. H. DeFriest
Sec., D. W. Woods
Treas., W. Cunningham
Mgr. Gas Dept., R. C. Wheeler
Sales Mgr., A. H. DeFriest
Pur. Agt., R. M. Ketchum
Ch. Chem., G. F. Olsen
Ch. Egr., V. F. Grace
Supts., J. L. McMahon, Santa Fe Springs, Calif.; J. W. Scott, 124 Avalon Blvd., Los Angeles, Calif.; H. W. Havins, Box P-1, Ventura, Calif.; H. S. Donovan, Lebec, Calif.; E. P. Donahue, R.F.D. 1, Box 466, Fullerton, Calif.
Plants in California
Capacity, 265,000

Getty Gasoline Co. (George F.), 1060 Subway Terminal Bldg., Los Angeles, Calif.
Pres., E. Kluth
V. P., H. M. Macomber
Sec., S. E. Cavanaugh
Treas., Firo Williams
Gen. Supt., B. A. Koehler
Ch. Egr., W. F. Crane
Supt., J. J. Murphy, Box 827, Santa Fe Springs, Calif.
Plant in California
Capacity, 10,000

Gilmore Gasoline Plant No. 1, 2423 East Twenty-eighth St., Los Angeles, Calif.
Pres., E. B. Gilmore
Sec.-Treas., C. S. Beesmyer
Gen. Supt., H. C. Eggleston
Sales Mgr., J. L. Coates
Pur. Agt., L. K. Snyder
Supt., W. Shellshear, 2140 Walnut Ave., Long Beach, Calif.
Plant in California
Capacity, 30,000

Gilmore-Dabney Gasoline Corp., 2423 East Twenty-eighth St., Los Angeles, Calif.
Pres., E. B. Gilmore
V. P., Milton H. Philler
Sec.-Treas., C. S. Beesmyer
Gen. Supt., H. C. Eggleston
Sales Mgr., J. L. Coates
Pur. Agt., L. K. Snyder
Supt., W. Shellshear, 2140 Walnut Ave., Long Beach, Calif.
Plant in California
Capacity, 90,000

Gladewater Gasoline Co., Gladewater, Tex.
Pres., C. R. Starnes
Sec.-Treas., E. L. Ames
Gen. Supt., W. G. Manes
Sales Mgr., A. C. Taylor
Plants in Texas
Capacity, 16,000

Gould & Son (Nancy E.), R.F.D. 6, Butler, Pa.
Gen. Supt., F. B. Gould
Plant in Pennsylvania
Capacity, 5

Graham Oil & Gas Co., Graham, Tex.
Pres., Philip Wiseman
V. P.s, H. S. Mudd, L. W. Wickes
Sec.-Treas., G. R. Paull
Gen. Supt., G. R. Paull
Ch. Egr., E. R. Marchman
Sales Mgr., W. H. Anders
Plant in Texas
Capacity, 8,000

Grimes (Otha H.) and Roy O. Neal, Atlas Life Bldg., Tulsa, Okla.
Gen. Supt., Harry Miller
Sales Mgr., Otha H. Grimes
Pur. Agt., Roy O. Neal
Supt., Harry Miller, Box 513, Drumright, Okla.
Plant in Oklahoma
Capacity, 3,400

Grimes Gasoline Co. (including plants of C. W. and Otha H. Grimes; Otha H. and Philo W. Grimes; Park T. and Oscar L. Grimes), 903 Kennedy Bldg., Tulsa, Okla.
Pres., Charles W. Grimes
Sec.-Treas., Otha H. Grimes
Supts., W. D. Kinsey, Okemah, Okla.; Joe Gibson, Weleetka, Okla.; H. B. Trickey, Weleetka, Okla.; John Elliott, Keystone, Okla.; L. C. Crupper, Mannford, Okla.; R. F. Chisolm, Mount Pleasant, Mich.
Plants in Oklahoma and Michigan
Capacity, 20,000

Gulf Production Co., Fort Worth, Tex.
Gen. Supt., W. H. Vaughn
Supt., J. H. Eubank, P. O. Box 88, Breckenridge, Tex.
Plant in Texas
Capacity, 10,600

Gulf Refining Co. of Louisiana, Gulf Bldg., Pittsburgh, Pa.
Chm. of Board, J. F. Drake
Pres., F. A. Leovy
V.P., C. R. Minor
Sec., W. J. Guthrie
Treas., J. E. Nelson
Asst. Sec., L. E. Delcuze
Asst. Treas., C. H. Stevens
Plants in Louisiana and Arkansas
Capacity, 22,000

Gypsy Oil Co., First National Bank Bldg., Tulsa, Okla.
V. P.s, Rush Greenslade, P. H. Bohart
Asst. Sec., D. B. Catterlin
Asst. Treas., C. B. Clothier
Gen. Supt., S. G. Sanderson
Pur. Agt., V. C. Fuller
Supts., J. J. Donovan, Box 368, Kiefer, Okla.; W. L. McCormick, Route 2, Kaw City, Okla.; Frank Routh, Box 967, Seminole, Okla.
Plants in Oklahoma
Capacity, 71,200

H

Haddon, James B., Sheffield, Pa.
Plant in Pennsylvania
Capacity, 84

Hanlon Gasoline Co., 718 National Bank of Tulsa Bldg., Tulsa, Okla.
Pres., E. I. Hanlon
V. P.s, J. H. Boyle, D. E. Buchanan
Sec. D. R. Bernard
Treas., J. H. Boyle
Sales Mgr., Ray Miller
Pur. Agt., J. H. Boyle
Ch. Chem., C. E. Benham
Ch. Egr., C. E. Wharton
Gen. Supt., C. E. Wharton
Supt., A. A. Hardee, Breckenridge, Tex.
Plants in Texas
Capacity, 50,000

Hanlon Gasoline Corp. of Texas, 718 National Bank of Tulsa Bldg., Tulsa, Okla.
Pres., E. I. Hanlon
V. P.s, D. E. Buchanan, J. H. Boyle
Sec., D. R. Bernard
Treas., J. H. Boyle
Gen. Supt., C. E. Wharton
Sales Mgr., R. E. Miller
Ch. Chem., C. E. Benham
Pur. Agt., J. H. Boyle
Ch. Engr., C. E. Wharton
Plant in Texas
Capacity, 30,000

Hapgood & Co. (R. T.), 705 Security Bank & Trust Bldg., Charleston, W. Va.
Owner, R. T. Hapgood
Gen. Supt., D. T. McClure
Supts., Wiley Price, Cedar Grove, W. Va.; D. T. McClure, Charleston, W. Va.
Plant in West Virginia
Capacity, 3,500

Harland Oil Co., Wolco, Osage County, Okla.; P. O. Drawer A
Pres., W. W. Vensel
V. P., T. S. Loffland
Sec., H. W. Vensel
Treas., J. M. Loffland
Gen. Supt. and Pur. Agt., H. B. Zahniser
Ch. Egrs. and Supts., D. C. Bohnsack, Wolco; E. B. Vensel, Barnsdall
Plants in Oklahoma
Capacity, 3,000

Harmony Gasoline Corp., Ardis Bldg., Shreveport, La.
V. P., D. W. Harris
Sec., T. J. Heard
Treas., B. R. Muirhead
Gen. Supt., A. H. Weyland
Pur. Agt., J. Lucas
Ch. Egr., H. T. Goss
Supt. Gaso. Div., E. P. Farmer
Supt., T. T. Gordon, Box 1659, Longview, Tex.
Plant in Texas
Capacity, 20,000

Haskell Brothers, Pleasantville, Pa.
Supt., William A. Haskell
Plants in Pennsylvania
Capacity, 50

Haskell & Dunham, Pleasantville, Pa.
Plant in Pennsylvania
Capacity, 100

Haskell, Roth & Bayliss, Titusville, Pa.
Supt., Geo. E. Bayliss
Plant in Pennsylvania
Capacity, 400

Henderson Co., Oliver-Eakle Bldg., Amarillo, Tex.
Pres., F. C. Henderson
V. P., J. Wood Glass
Sec., F. C. Hall
Treas., E. P. Henderson
Gen. Supt., C. C. Cherry
Ch. Egr., C. C. Cherry
Pur. Agt., F. C. Hall
Supts., W. H. Rogers and J. C. Terry, El Dorado, Ark.; C. A. Seiple, Sanford, Tex.
Plants in Arkansas and Texas
Capacity, 90,000

Herkness (J. S.), Tenth and Lombard Sts., Philadelphia, Pa.
Pres., J. S. Herkness
Gen. Supt., A. J. Flint
Plant in Louisiana
Capacity, 1,000

Hickey & Rieg, Clarendon, Pa.
Plant in Pennsylvania
Capacity, 300

Highway Gasoline Co. (See Bolsa Chica Oil Corp., parent company)

Home Gas Co., 604 Main St., Clarion, Pa.
Pres., E. H. Banner
V. P., H. H. Arnold
Sec., M. M. Kaufman
Gen. Supt., A. J. McCleary
Pur. Agt., Abe Kaufman
Plant in Pennsylvania

Honolulu Oil Corp., Ltd., 215 Market St., San Francisco, Calif.
Pres., A. C. Dieriex
V. P.s, A. C. Mattei, W. M. Alexander, A. P. Welch, W. P. Roth
Sec., L. A. Cranson
Treas., W. P. Roth
Gen. Supt., R. R. McGuire
Supt. Warren Kraft, Taft, Calif.
Plants in California
Capacity, 80,000

Hope Construction & Refining Co., 545 William Penn Way, Pittsburgh, Pa.
Pres., H. C. Cooper
V. P.s, L. L. Tonkin, J. B. Tonkin
Sec., S. E. W. Burnside
Treas., J. C. Chisler
Gen. Supt., W. B. Gribble
Pur. Agt., F. O. LeRoy
Ch. Egr., L. L. Tonkin
Ch. Chem., R. W. Miller
Plants in West Virginia, Ohio and Pennsylvania
Capacity, 127,300

Huber Co. (J. M.), of Louisiana, Inc., Box 278, Borger, Tex.
Pres., J. M. Huber
V. P., H. W. Huber
Sec.-Treas., Walter Huber
Sales Mgr., R. H. Eagles
Plant in Louisiana
Capacity, 6,000

Huber Corp. (J. M.), Swartz, La.
Pres., H. W. Huber, 460 W. Thirty-fourth St., New York N. Y.
V. P., H. W. Price, Box 278, Borger, Tex.
Sec., Walter David, Box 278, Borger, Tex.
Treas., Walter Huber, 460 W. Thirty-fourth St., New York, N. Y.
Plant in Louisiana
Capacity, 2,000

Humble Oil & Refining Co., Humble Bldg., Houston, Tex.
Pres., R. L. Blaffer
V. P.s, H. C. Wiess, James Anderson, Wallace E. Pratt, John R. Suman, Judge E. E. Townes
Sec., F. O. Freese
Treas., R. L. Blaffer
Gen. Supt., J. O. Sue
Sales Mgr., B. H. Brown
Pur. Agt., J. M. Sitler
Ch. Egr., C. M. Gibble
Supts., W. B. Calhoun, Overton, Tex.; I. C. Corbell, Rising Star, Tex.; R. W. Way, Bellville, Tex.; G. L. McCormick, Conroe, Tex.
Plants in Texas
Capacity, 93,500

Hunter, Livingston L., Trust, Tidioute, Pa.
Plant in Pennsylvania
Capacity, 300 (shut down)

I

Imperial Oil & Gas Products Co., Union Bank Bldg., Pittsburgh, Pa.
Pres., Joseph Hartman
V. P.s, Paul A. Hartman, Joseph W. Hartman
Sec.-Treas., W. P. McNellie
Sales Mgr. and Pur. Agt., Paul A. Hartman
Supt., J. C. Westfall, P. O. Box 749, El Dorado, Ark.
Plant in Arkansas
Capacity, 500

Indian Territory Illuminating Oil Co., Drawer L, Bartlesville, Okla.
Pres., H. V. Foster
V. P.s, Burdette Blue, H. O. Caster, F. R. Coates, W. A. Jones, C. B. Caldwell, R. L. Gordon, A. V. Hoenig
Sec., E. B. Emenhiser
Treas., C. H. Caldwell

Gen Supt., T. A. Stevens
Sales Mgr., G. V. N. Yates
Ch. Chem., Dana Hefley
Pur. Agt., H. D. Partridge
Supts., James Porter, Box 4577, Capitol Hill, Oklahoma City, Okla.; Paul Shunkey, Box 4577, Capitol Hill, Oklahoma City, Okla.; C. D. McReynolds, Box 4577 Capitol Hill, Oklahoma City, Okla.; H. P. Wingo, Box 4577, Capitol Hill, Oklahoma City, Okla.
Plants in Oklahoma
Capacity, 150,000

International Oil & Gas Co., Washington, Pa.
Plant in Illinois
Capacity, 2,000

Italo Petroleum Corp. of America, 391 Sutter St., San Francisco, Calif.
Plant in California
Capacity, 300

J

Jackson, Fred W., Chicora, Pa.
Plant in Pennsylvania
Capacity, 360

Jennings Brothers Co. (E. H.), 608 Columbia Bldg., Pittsburgh, Pa.
Pres., R. G. Jennings
V. P., E. D. Jennings
Sec., E. H. Jennings
Treas., R. G. Jennings
Plants in Pennsylvania
Capacity, 2,350

K

Kanawha Oil Co., 2009 Clark Bldg., Pittsburgh, Pa.
Pres. and Sec., E. D. Jennings
V. P. and Treas., R. G. Jennings
Asst. Sec., J. G. Vollmer
Supt., A. H. Reardon, Jacksonburg, W. Va.
Plants in West Virginia
Capacity, 1,500

Kansas Gasoline Co., 1413 Hunt Bldg., Tulsa, Okla.
Pres., J. A. Hull
V. P., R. C. Riley
Sec., O. J. McCann
Treas. and Pur. Agt., P. F. Cole
Gen. Supt., J. L. Looney
Supt., J. L. Looney, Box 1007, Winfield, Kans.
Plant in Kansas
Capacity, 5,000

Kentucky Pipe Line Co., 311 West Chestnut St., Louisville, Ky.
Pres., T. B. Wilson
V. P.s, J. J. McKenna, A. W. Lee, R. Montgomery
Sec., F. J. Preiffer
Treas., J. J. McKenna
Gen. Supt. and Sales Mgr., J. A. Yunker
Pur. Agt., G. Davies
Supt., H. D. Robb, Winchester, Ky.
Plant in Kentucky
Capacity, 2,600

Kewanee Oil & Gas Co., 2317 Fidelity-Philadelphia Trust Bldg., Philadelphia, Pa.
Pres., Wm. M. Potts
Sec. and Treas., R. B. Ashenfelter
Gen. Supt., F. B. Howland
Supt., T. B. Steele, P. O. Box 232, Robinson, Ill.
Plants in Illinois
Capacity, 485

L

LaSalle Petroleum Co., 612 Wright Bldg., Tulsa, Okla.
Receivers, W. J. Schnur and Phil D. Williams
Supt., Phil D. Williams, P. O. Box 576, Burkburnett, Tex.
Plant in Texas
Capacity, 8,000 (Shut Down)

Lebow (C. H.), Inc., 509 Atlas Life Bldg., Tulsa, Okla.
Pres., C. H. Lebow
Sec., Bertha L. Johnson
Supt., A. L. Miller, Box 86, Drumright, Okla.
Plant in Oklahoma
Capacity, 1,000

Lisbon Gasoline Co., Inc., 229 Ricou-Brewster Bldg., Shreveport, La.
Pres., O. J. Dykes
V. P., Geo. W. James
Sec., T. J. Heard
Treas., D. R. Muirhead
Gen. Supt., M. H. Trout, Box 464, Henderson, Tex.
Plants in Texas
Capacity, 30,000

Lomita Gasoline Co., 2901 Orange Ave., Long Beach, Calif.
Pres., F. R. Bain
V. P.s, A. T. Jergins, C. M. Cotton
Sec. and Treas., F. S. Wade
Gen. Supt., L. V. Cassady
Pur. Agt., W. R. Davis
Plant in California
Capacity, 40,000

Lone Star Gas Co., 1915 Wood St., Dallas, Tex.
Pres., L. B. Denning
V. P.s, R. A. Crawford, F. L. Chase
Sec. and Treas., D. L. Cobb
Gen. Supt., E. F. Schmidt
Sales Mgr., A. F. Garrett
Ch. Egr., J. F. Foster
Pur. Agt., B. R. Newbery
Supts., F. H. Townsend, Gorden, Tex.; Felix L. McCurdy, Route 1, Cisco, Tex.; C. R. Rogers, Hollis, Okla.; H. C. Wells, Petrolia, Tex.; J. E. Johnson, Box 567, Gainesville, Tex.; G. H. King, Box 488, Ranger, Tex.
Plants in Texas
Capacity, 68,000

Lone Star Gasoline Co., 1915 Wood St., Dallas, Tex.
Pres., L. B. Denning
V. P.s, R. A. Crawford, F. L. Chase
Sec. and Treas., D. L. Cobb
Gen. Supt., J. R. Jarvis
Sales Mgr., A. F. Garrett
Pur. Agt., B. R. Newbery
Ch. Egr., J. L. Foster
Supts., Harry Wheeldon, P. O. Box 788, Ranger, Tex.; J. A. Bates, P. O. Drawer 00, Breckenridge, Tex.
Plants in Texas
Capacity, 111,000

Los Nietos Producing & Refining Co., Ltd., 714 W. 10th St., Los Angeles, Calif.
Pres., E. L. Doheny
V. P.s, C. W. Smith, R. S. Lytle, R. M. Sands
Sec., G. M. Johnson, Jr.
Treas., Olin Wellborn
Sales Mgr., R. S. Lytle
Pur. Agt., W. A. Pierce
Ch. Chem., H. B. Pawson
Ch. Egr., R. A. Silent
Supt., George Thompson, Avenal, Calif.
Plant in California
Capacity, 100,000

Louisiana Gas & Fuel Co., City Bank Bldg., Shreveport, La.
Plants in Louisiana
Capacity, 40,000

Louisville Gas & Electric Co., 311 West Chestnut St., Louisville, Ky.
Pres., T. B. Wilson
V. P., A. W. Lee
Sec., J. J. McKenna
Gen. Supt., J. A. Yunker
Pur. Agt., G. Davies
Supt., H. D. Robb, Winchester, Ky.
Plant in Kentucky
Capacity, 2,500

M

Magnolia Petroleum Co., Box 900, Dallas, Tex.
Pres., D. A. Little
V. P. and Gen. Mgr., Ralph H. Kinsloe
Sec., L. S. Sinclair
Treas., W. L. Holmes
Gen. Supt., R. D. Hanley
Mgr., F. M. Lege, Jr.
Pur. Agt., J. P. David
Supts., H. L. Sharp, El Dorado, Ark.; C. V. Quinn, St. Louis, Okla.; J. F. Lewis, Healdton, Okla.; W. B. January, Electra, Tex.; V. L. Dickinson, Pampa, Tex.; J. A. Upton, Olden, Tex.; O. B. Zeek, Shamrock, Okla.
Plants in Texas, Arkansas and Oklahoma
Capacity, 118,050

Mahutska Oil Co., Robinson State Bank Bldg., Robinson, Ill.
Pres., Alex U. McCandless
V. P., L. G. Niehoff
Sec., John A. Byerly
Treas., L. B. Niehoff
Gen. Supt., Frank B. Barnes
Pur. Agts., Alex U. McCandless and Frank B. Barnes
Supts., S. H. Correll, R. F. D. 3, Robinson, Ill.; Fred Boyd, R. F. D., Oblong, Ill.
Plants in Illinois
Capacity, 2,000

Marathon Oil Co., Thompson Bldg., Tulsa, Okla.
Pres., W. W. Fleming
V. P.s, J. L. Cook, M. E. Wagner and L. B. McCammon
Sec., W. J. Wilson
Treas., J. L. Cook
Gen. Supts., W. E. Smith, Tex. Div.; G. M. Cook, Okla. Div.
Supts., L. L. Pittman and Homer Nash, Box 277, Eliasville, Tex.; G. C. Ellington, Drawer B, Bristow, Okla.
Plants in Oklahoma and Texas
Capacity, 30,000

Mars Co., The, 306-8 Seneca St., Oil City, Pa.
Pres., G. E. Welker
V. P., A. C. Burwell
Sec. and Treas., H. S. Rose
Sales Mgr., C. W. Gleason
Pur. Agt., M. J. Conner
Ch. Chem., J. R. Fay
Ch. Egr., C. W. Gleason
Supts., W. E. Huggler, Van, Pa.; W. C. McDonald, Hampton St., Oil City, Pa.; J. O. Clark, Lewis Run, Pa.; E. L. Betz, Endeavor, Pa.; N. C. Gifford, Clarion, Pa.
Plants in Pennsylvania
Capacity, 21,300

Martin, Orie L., Butler, Pa.
Plant in Pennsylvania
Capacity, 8

Masoneal Gasoline Co., Kennedy Bldg., Tulsa, Okla.
Pres., D. B. Mason
V. P., E. L. Thompson
Sec., D. B. Mason, Jr.
Gen. Supt., O. Reeves
Supt., O. Reeves, Box 103, Osage, Okla.
Plant in Oklahoma
Capacity, 1,500

Master and Hess, Fern, Pa.
Parnership
Plant in Pennsylvania
Capacity, 100

Pres., B. O. Mahaffey
V. P. and Gen. Mgr., C. F. Butcher
Sec. and Treas., E. R. Christian
Ch. Egr., R. E. Hilpert
Supt., J. B. Crisman, 604 Wright Bldg., Tulsa
Plant in Oklahoma
Capacity, 1,500

Melrose Oil & Gas Co., F. & P. Bank Bldg., Sistersville, W. Va.
Pres., Neal K. Wilson, Cuba, N. Y.
V. P., John P. Flynn
Sec., Louis N. Thomas, Fort Worth, Tex.
Treas., Neal K. Wilson
Gen. Supt., R. V. Adams
Supts., Claude H. Gorby, S. M. Tallurace
Plants in West Virginia
Capacity, 100

Midco Oil Corp., Box 2085, Tulsa, Okla.
Pres., C. C. Toomey
V. P., Burton French
Sec. and Treas., Burton French
Asst. Sec. and Treas., Grace A. Wade
Supts., C. L. Quick, J. E. Burgess
Plants in Oklahoma
Shut down

Mid-Continent Petroleum Corp., Cosden Bldg., Tulsa, Okla.
Pres., Jacob France
V. P., G. O. Moody
Asst. Sec., A. D. Kneale
Treas., Charles Klein
Gen. Supt., F. E. Karney
Pur. Agt., C. A. Prichard
Supts., F. C. Bach, Box 896, Shamrock, Okla.; Ed. Burgess, Box 97, Leonard, Okla.; R. H. Corbin, Box 387, Morris, Okla.; J. A. Blakemore, Box 788, Cromwell, Okla.; C. C. Wolford, Box 11, Stroud, Okla.; Glenn Fisk, Route 4, Box 295B, Tulsa, Okla.
Plants in Oklahoma
Capacity 85,000

Midland Gasoline Co., Box 338, Conroe, Tex.
Pres., F. C. Nickel
V. P., H. M. Brown, Houston, Tex.
Sec., H. T. McGown, Fort Worth, Tex.
Treas., H. M. Brown, Houston Tex.
Gen. Supt., P. L. McLaren, Box 26, Conroe, Tex.
Plant in Texas
Capacity, 15,000

Midland Oil Co., Petroleum Center, Pa.
Plant in Pennsylvania
Capacity, 1,200

Miller & Marshall, Karns City, Pa.
Plant in Pennsylvania
Capacity, 25

Mohawk Petroleum Co., 806 Financial Center Bldg., San Francisco, Calif.
Pres., Alfred L. Marsten
V. P.s, Alfred L. Marsten, Jr., and Edwin V. McKenzie
Sec. and Treas., M. E. Roof
Gen. Supt. and Pur. Agt., J. A. Robinson
Sales Mgr., E. P. Marnell
Supt., J. A. Robinson, Box 1476, Bakersville, Calif.
Plant in California
Capacity, 10,000

Montana Power Gas Co., Electric Bldg., Butte, Mont.
V. P., F. W. Bird
Treas., J. R. Thomas
Pur. Agt., W. T. Jackson
Ch. Egr., H. H. Cockrane
Supt., E. M. Parkin, Cut Bank, Mont.
Plant in Montana
Capacity, 9,000

Montgomery, J. B., McKees Rocks, Pa.
Sec., Bert Noble
Treas., S. H. Morgan
Sales Mgr., Bert Noble
Pur. Agt., Bert Noble
Ch. Egr., A. A. Bock
Plant in Pennsylvania
Capacity, 100

Moore, Way & Harrison, Titusville, Pa.
Plant in Pennsylvania
Capacity, 150

Mountain States Oil Corp., Barela, Colo.
Plant in Colorado
Capacity, 6,000

Muskingum Oil Co., Sistersville, W. Va.
Plant in Ohio
Capacity, 1,000

Myers Bros. & Hazzard, Tidioute, Pa.
Plant in Pennsylvania
Capacity 100

N

National Compressing Co., 402 Avery St., Parkersburg, W. Va.
Plant in West Virginia
Capacity, 50

National Products Co., 1510 Commonwealth Bldg., Pittsburgh, Pa.
Pres., F. W. Finley
Sec. and Treas., M. E. Eberle
Gen. Supt., H. A. Frame
Supts., H. G. Cutting, Cleveland, Okla.;

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J. G. Young, Oilton, Okla.; Ralph Moore, Slick, Okla.
Plants in Oklahoma
Capacity, 5,400

Neal Gasoline Co., 507 Atlas Life Bldg., Tulsa, Okla.
Pres., Roy O. Neal
Treas., H. B. Neal
Gen. Supt. and Pur. Agt., Roy O. Neal
Ch. Egr., Roy O. Neal
Supts., L. W. Blair, Box 186, Osage, Okla.; F. Hamilton, Copan, Okla.
Plants in Oklahoma
Capacity, 5,200

New York Oil Co., 441 South Center St., Casper, Wyo.
Pres., C. A. Munroe
V. P., J. M. McIntire
Sec., C. H. Lavin
Treas., W. A. Blind
Gen. Supt., L. T. Krueger
Supt., L. Glenn Kelly, Box 6, Riverton, Wyo.
Plant in Wyoming
Capacity, 1,500

New York Petroleum Co., 402 Avery St., Parkersburg, W. Va.
V. P., H. L. Stout
Sec. and Treas., B. Ferrell
Gen. Supt., John L. Davis
Plants in West Virginia
Capacity, 250

Nolan & Lamberton, 212 South Olympia St., Tulsa, Okla.
Partnership, Nolan Oil & Gas Co., Box 558, Chanute, Kans.; R. L. Lamberton, Box 331, Franklin, Pa.; W. J. Lamberton Estate, Tulsa, Okla.
Supt., W. E. Russell, Route 4, Oblong, Ill.
Plant in Illinois
Capacity, 100

Norris, Mrs. Jennie, Parkersburg, W. Va.
Plant in Ohio
Capacity, 100

North American Oil Consolidated, 351 California St., San Francisco, Calif.
Pres., T. C. Kierulff
V. P., H. B. Sperry
Sec., Frank Evans
Gen. Supt., A. B. Jenks
Plant in California
Capacity, 3,000

North Penn Gas Co., 103 Mill St., Port Allegany, Pa.
Pres., C. I. Crippen, 30 Broad St., New York City
V. P., J. H. Isherwood, Port Allegany, Pa.; G. A. Crosby, 30 Broad St., New York City
Sec., J. C. Forsyth, 30 Broad St., New York City
Treas., C. R. Beddows, 30 Broad St., New York City
Plant in Pennsylvania
Capacity, 600 (Shut Down)

Norwalk Company, 634 So. Spring St., Los Angeles, Calif.
Pres., Lionel T. Barneson
V. P., H. J. Barneson
Sec., W. E. Kropp
Gen. Mgr., L. L. Aubert
Pur. Agt., H. M. Paulson
Supts., K. E. Grigsby, Route 3, Box 255, Santa Fe Springs, Calif.; Jack Brennan, Box 688, Maricopa, Calif.
Plants in California
Capacity, 70,000

O

Ockland Gasoline Prod. Co., 607 McBirney Bldg., Tulsa, Okla.
Plant in Texas
Capacity, 4,000

Ohio Oil Co., Donnell Bldg., Findlay, Ohio
Pres., O. D. Donnell
V. P.s, C. L. Fleming, J. K. Kerr, John McFadyen, W. W. Fleming, G. C. McCullough
Sec., E. B. Redpath
Treas., F. A. Billstone
Supts., E. B. Charlton, Shreveport, La.; J. Denton, Bridgeport, Ill.; J. R. Thorpe, Robinson, Ill.; Burr Farr, Casper, Wyo.; Geo. Sowards, Casper, Wyo.; H. T. Henton, Casper, Wyo.; Herman Brunt, Casper, Wyo.; S. A. Smith, Los Angeles, Calif.
Plants in Louisiana, Wyoming, Illinois and California
Capacity, 84,531

Ohio Producing & Refining Co., East Ohio Gas Bldg., Cleveland, Ohio
Pres., John J. McMahon
V. P., W. G. Hagan
Sec. and Treas., W. G. Rogers
Gen. Supt., J. J. Schmidt
Pur. Agt., D. F. Maloney
Ch. Chem. and Egr., C. F. Turner
Plant in Ohio
Capacity, 6,000

Oil & Gas Co., 318 Juliana St., Parkersburg, W. Va.
Pres., Reese Blizzard
V. P., A. D. Ireland
Sec., Ross Wells
Treas., T. G. Reitz
Gen. Supt., Ira Williams
Pur. Agt., Ira Williams, St. Marys, W. Va.
Supt., W. O. Wells, Harrisville, W. Va.
Plant in West Virginia
Capacity, 250

Oil State Gasoline Co., 424 So. Cheyenne Ave., Tulsa, Okla.
Pres., Oscar R. Howard
V. P., C. F. Duffield
Sec., W. J. Zollinger
Gen. Mgr., C. W. Stepp
Supts., E. E. Stepp, Jenks, Okla.; C. W. Stepp, Yale, Okla.
Plants in Oklahoma
Capacity, 4,500

Oklahoma Gasoline Plants, Inc., Box 896, Sapulpa, Okla.
Pres., L. B. Jackson
V. P., E. E. Thompson
Sec., Wm. Maurer
Treas., R. J. Ranck
Gen. Supt. and Pur. Agt., E. E. Thompson
Ch. Egr., G. L. Newman
Plant in Oklahoma
Capacity, 10,000

Oklahoma Utilities Co., 123½ W. Seventh St., Bristow, Okla.
V. P., R. W. Booze
Asst. Sec. and Treas., J. A. Staples
Gas Supt., R. C. Poage
Pur. Agt., V. L. Wilson
Supt., A. C. Wright, Box 68, Bristow, Okla.
Plant in Oklahoma
Capacity, 5,000

Orfis Gasoline Prod. Co., 607 McBirney Bldg., Tulsa, Okla.
Plant in Texas
Capacity, 4,000

Owens, Libby-Owens, Gas Dept., Charleston, W. Va.
Mgr., W. E. Spalding
Gen. Supt., F. F. Ketchum
Ch. Egr., Wm. B. Strong
Pur. Agt., L. L. Kohlbecker
Supt., F. F. Ketchum, Owens, W. Va.
Plant in West Virginia
Capacity, 10,000

P

Pacific American Gasoline Co. of Texas, Box 278, Borger, Tex.
Pres., H. W. Price
V. P., Walter David
Sec. and Treas., H. W. Huber, 460 W. 34th St., New York City
Gen. Supt., C. B. Rose
Ch. Egr., H. H. Brown
Ch. Chem., C. Van Ans
Supt., C. B. Rose
Plant in Texas
Capacity, 25,000

Pacific Western Oil Co., 1060 Subway Terminal, Los Angeles, Calif.
Pres., H. P. Grimm
V. P., H. M. Macomber
Sec., D. T. Staples
Treas., W. G. Gibson
Gen. Supt., Ben A. Koehler
Pur. Agt., C. A. Jackson
Ch. Egr., W. F. Crane
Supts., B. S. Anderson, Ventura, Calif.; Byron Norton, Goleta, Calif.
Plants in California
Capacity, 40,000

Pala Oil Co., Inc., 327 Atkins Ave., Shreveport, La.
Pres., F. L. Wiegand
V. P., J. M. Post
Sec. and Treas., T. M. Hope
Pur. Agt., C. P. Hanlen
Plant in Louisiana
Capacity, 300

Pan California Oil Corp., 719 Security Bldg., Los Angeles, Calif.
Pres., Robert Bromberg, Receiver
Gen. Supt., J. L. Dunn
Plant in California
Capacity, 5,000

Parade Gasoline Co., Inc., 421 Commercial National Bank Bldg., Shreveport, La.
Pres., J. B. Atkins
V. P.s, H. L. Hunt, Tyler, Tex.; D. P. Hamilton
Sec. and Treas., Roy Lee
Asst. Sec. and Treas., R. A. Worley
Gen. Supt., E. L. Clover, Overton, Tex.
Sales Mgr. and Pur. Agt., J. B. Atkins
Ch. Chem., R. W. Newell, Overton, Tex.
Ch. Egr., B. G. Harbison, Overton, Tex.
Supt., E. L. Clover, Box 528, Overton, Tex.
Plant in Texas
Capacity, 30,000

Paramount Natural Gasoline Co., Hunt Bldg., Tulsa, Okla.
Pres., Joe Danciger
V. P., Jack Danciger
Sec., J. E. Vaeth
Treas., A. Danciger
Pur. Agt., J. E. Vaeth
Plant in Texas
Capacity, 16,000

Pennsylvania Oil Co., Sheffield, Pa.
Plant in Pennsylvania
Capacity, 10,000

Peoples Ice & Fuel Co., United Life Bldg., Salina, Kans.
Pres., O. E. Ackers, Topeka, Kans.
V. P., C. E. Brock
Sec., C. F. DeWitt, care of Illinois Power & Light Co., St. Louis, Mo.
Treas., H. E. Johnson, care of Illinois Power & Light Co., St. Louis, Mo.
Pur. Agt., I. S. Stewart, Topeka, Kans.
Ch. Egr., W. J. White
Supts., C. R. Williams, McPherson, Kans.; R. B. McLaughlin, Medicine Lodge, Kans.
Plants in Kansas
Capacity, 26,000

Pep Gasoline Co., 6247 Brookside Blvd., Kansas City, Kans.
Pres., J. O. Bruen
Treas. and Gen. Mgr., E. W. Bruen
Plant in Kansas
Capacity, 1,800

Peppers Gasoline Co., Box 858, Enid, Okla.
Pres., Chas. C. Peppers
Sec., H. H. Champlin
Supts., J. C. McConnico, Box 86, Oklahoma City, Okla.; O. C. Sullivan, Covington, Okla.
Plant in Oklahoma
Capacity, 14,000

Phillips Petroleum Co., Phillips Bldg., Bartlesville, Okla.
Pres., Frank Phillips
V. P.s, L. E. Phillips, J. H. Kane, W. N. Davis, H. E. Koopman, J. M. Sands, H. A. Trower, C. P. Dimit, F. E. Rice, C. R. Musgrave, G. G. Oberfell and R. H. Lynn
Sec. and Treas., O. K. Wing
Gen. Supt., F. S. Gleason
Sales Mgr., A. M. Hughes
Pur. Agt., M. B. Heine
Ch. Egr., A. H. Riney
Supts., J. M. Williams, Box 367, Webb City, Okla.; M. J. Carr, Box 180, Route 4, Bartlesville, Okla.; L. V. Miller, Box 88, Pershing, Okla.; R. L. Ford, Drawer B, Snomac, Okla.; J. H. Oliver, Okmulgee, Okla.; R. K. McConnell, Box 989, Oklahoma City, Okla.; L. P. Clarke, Box 967, Wetumka, Okla.; W. W. Ford, Box 37, Bryant, Okla.; R. L. Stewart, Box 606, Wewoka, Okla.; C. E. Thomas, Box 57, Cromwell, Okla.; A. F. McDaniel, Box 398, Madison, Kans.; J. H. Gulley, Box 1058, Homer, La.; A. W. Paris, Box 666, Crane, Tex.; Carl Fisher, Box 666, Crane, Tex.; W. J. Haskins, Box 9, Judkins, Tex.; A. C. Brock, Box 757, Hobbs, N. Mex.; Rex McRoy, Box 358, Whittenburg, Tex.; C. A. Thorne, Box 358, Whittenburg, Tex.; O. J. Brazil, Box 358, Whittenburg, Tex.; Walter Beet, Box 358, Whittenburg, Tex.; A. F. Lasater, Box 358, Whittenburg, Tex.; E. R. Martin, Box 358, Whittenburg, Tex.; B. V. Wallis, Box 358, Whittenburg, Tex.; H. M. Rapp, Box 358, Whittenburg, Tex.; W. R. Barrett, Route 2, Pampa, Tex.; C. Heironimus, Route 2, Pampa, Tex.; Ben Williams, Route 2, Pampa, Tex.; Homer Gibson, Route 2, Pampa, Tex.; W. R. Barrett, Route 2, Pampa, Tex.; E. E. Traywick, Route 2, Pampa, Tex.; H. F. Magerkwirth, Route 2, Pampa, Tex.; L. B. Wood, Box KK, Breckenridge, Tex.; F. B. Joyce, Box 507, Pioneer, Tex.; J. F. Steed, Frankell, Tex.; R. C. Mason, Ibex, Tex.; J. P. Weatherall, South Bend, Tex.; J. F. Waters, Eliasville, Tex.; J. K. Gibson, Box 177, Pasadena, Tex.; Don Smith, 202 University St., Seminole, Okla.
Plants in Oklahoma, Texas, Louisiana, Kansas and New Mexico
Capacity, 1,098,500

Pittsburgh Oil & Gas Co., 1005 Farmers Bank Bldg., Pittsburgh, Pa.
Pres., E. B. Reeser, Box 2091, Tulsa, Okla.
V. P. and Sec., Jas. A. Dunn, 120 Broadway, New York City
Treas., L. D. Messner, Box 2033, Tulsa, Okla.
Pur. Agt. and Gen. Supt., K. W. Haley
Supts., C. R. Jeannerat, Third St., Clarion, Pa.; C. A. Cousten, Middlebourne, W. Va.; Arthur Cousten, Macfarlan, W. Va.; V. P. Stover, Sycamore Valley, Ohio; R. A. Bookman, Schley, Ohio
Plants in Pennsylvania, West Virginia and Ohio
Capacity, 2,875

Porter Brothers, Sarah Furnace, Pa.
Plant in Pennsylvania
Capacity, 100

Powers, M. F., 624 So. Cheyenne Ave., Tulsa, Okla.
Owner, M. F. Powers
Sales Mgr., E. C. Sager
Pur. Agt., G. A. Keefe
Supt., L. E. Flanagan, Depew, Okla.
Plants in Oklahoma
Capacity, 4,500

Powers & Quinlan, 624 So. Cheyenne Ave., Tulsa, Okla.
Partnership, M. F. Powers and Felix Quinlan, Jr.
Gen. Supt., Felix Quinlan
Sales Mgr., E. C. Sager
Pur. Agt., G. A. Keefe
Supt., Felix Quinlan, Beggs, Okla.
Plants in Oklahoma
Capacity, 2,000

President Oil Co., Emlenton, Pa.
Pres., H. J. Crawford
V. P., T. P. Gregory
Sec. and Treas., J. E. Taylor
Gen. Supt., J. S. Beals
Supts., F. G. McCord, Emlenton, Pa.; S. Smith, Venus, Pa.; Lloyd L. Henry, Parker, Pa.
Plants in Pennsylvania
Capacity, 370

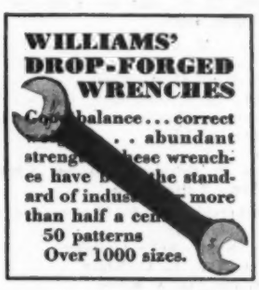
Preston Oil Co., Kanawha Valley Bldg., Charleston, W. Va.
Pres., Chas. A. Munroe

BETTER
because it's
SIMPLER

Williams' "Vulcan Boll-Weevil" is simplicity itself. That goes for its *construction* as well as operation.

It has only six parts. All are so constructed and assembled as to minimize breakage, wear or trouble of any kind. The "I-beam" handle lends extreme rigidity and strength. Two bolts secure the jaws positively—they cannot spread.

Throughout, it is a sturdy, low-upkeep REVERSIBLE ACTION TONG, adaptable for general oil field and refinery use; particularly efficient and rapid on pipe line work.



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SUPERIOR DROP-FORGED TOOLS
VULCAN
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REVERSIBLE ACTION TONGS

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Sec., Leith V. Watkins
Treas., N. E. Shupe
Sales Mgr., R. M. Clark
Ch. Chem., R. A. Schuster
Supts., Lee Meyers, R.F.D. No. 2, Summerfield, Ohio; J. W. Dumbaugh, Pavonia, Ohio; W. P. Caley, Sugar Grove, Ohio; L. A. Chrisman, Homer, Ohio
Plants in Ohio
Capacity, 198,000

Pryor, Berry, Petrolia, Pa.
Plant in Pennsylvania
Capacity, 25

Pure Oil Co., 35 East Wacker Drive, Chicago, Ill.
Pres., H. M. Dawes
V. P.s, W. E. Hutton, R. W. McIlvain, C. B. Watson, N. H. Weber, L. S. Wescoat, F. S. Heath and Rawleigh Warner
Sec., L. S. Wescoat
Treas., Rawleigh Warner
Sales Mgr., R. H. McElroy
Pur. Agt., G. L. Parsons
Ch. Chem., R. C. Osterstrom
Ch. Egr., D. E. Sullivan
Supts., W. L. McCarty, Box 1277, Drumright, Okla.; J. H. Prater, Box 224, Van, Tex.; W. R. Waggoner, Box 87, Daws, W. Va.
Plants in Oklahoma, West Virginia and Texas
Capacity, 59,950

R

Rainbow Gasoline Corp., 818 McBirney Bldg., Tulsa, Okla.
Pres., D. S. Brooks
V. P., M. D. Brooks
Sec., F. C. Hall
Treas., F. C. Henderson
Sales Mgr. and Pur. Agt., F. C. Hall
Gen. Supt., C. C. Cherry
Ch. Egr., O. H. Stanbrough
Plant in Arkansas
Capacity, 20,000

Ramage, S. Y., 6 First National Bank Bldg., Oil City, Pa.
Supts., Fred McDaniels, Reno, Pa.; F. J. Swanson, R.F.D., Tidioute, Pa.; Clarence Dearth, Bens Run, W. Va.
Plant in Pennsylvania
Capacity, 200

Red Brush Oil Co., 10 Walnut St., Tidioute, Pa.
Sec. and Treas., C. E. Gesin
Supt., C. E. Gesin, Tidioute, Pa.
Plant in Pennsylvania
Capacity, 40

Reno Oil Co., Wells Bldg., Sistersville, W. Va.
Pres., J. P. Flynn
Sec. and Treas., W. R. Reitz
Gen. Supt. and Pur. Agt., J. P. Flynn
Supts., A. C. Mercer, Ellenboro, W. Va.; John McGuirk, R.F.D., Harrisville, W. Va.; Otto Woodburn and S. G. Hissam, R.F.D., Sistersville, W. Va.
Plants in West Virginia
Capacity, 252

Reservoir Hill Gasoline Co. 417 So. Hill St., Los Angeles, Calif.
Exec. V. P., Frank A. Morgan
V. P., Frank A. Morgan
Sec. and Treas., M. R. Gross
Supt., R. E. Wells
Pur. Agt., H. H. Kelly
Sales Mgr., A. H. Harris
Plant in California
Capacity, 12,000

Reserve Gas Co., 545 Wm. Penn Way, Pittsburgh, Pa.
Pres., J. B. Tonkin
V. P., T. B. Gregory
Sec., S. E. W. Burnside
Treas., J. C. Chisler
Gen. Supt., W. B. Gribble
Pur. Agt., F. O. LeRoy
Ch. Chem., R. W. Miller
Ch. Egr., L. L. Tonkin
Supt., John Campbell, Valley Chapel, W. Va.
Plant in West Virginia
Capacity, 20,000

Reserve Development Co., Philtower Bldg., Tulsa, Okla.
Pres., Fred Phillips
V. P.s, W. M. Irish, III, W. F. Maxwell
Sec., Hunter L. Johnson
Treas., W. F. Maxwell
Pur. Agt., E. L. Henry
Supt., H. L. Morgan, Box 9, Louann, Ark.
Plants in Arkansas
Capacity, 5,000

Reservoir Hill Gasoline Co., 815 Subway Terminal Bldg., Los Angeles, Calif.
Exec. V. P., Chas. S. Jones
V. P., Frank Morgan
Sec. and Treas., M. R. Gross
Sales Mgr., A. H. Harris
Supt., R. E. Wells
Pur. Agt., H. H. Kelly
Plant in California
Capacity, 12,000

Rice Ranch Oil Co., 262 So. Los Angeles St., Los Angeles, Calif.
Pres., G. W. Lichtenberger
V. P.s, Alfred J. Bayer and P. H. O'Neil
Sec., H. G. Phillips
Gen. Supt., Edgar Craig
Plant in California
Capacity, 6,000

Riddle Farm Oil Co., Karns City, Pa.
Plant in Pennsylvania
Capacity, 50

Rio Grande Oil Co., 417 So. Hill St., Los Angeles, Calif.
Exec. V. P., C. S. Jones
V. P., Frank A. Morgan
Sec. and Treas., M. R. Gross
Sales Mgr., A. H. Harris
Supt., R. E. Wells
Pur. Agt., H. H. Kelly
Plant in California
Capacity, 10,000

Roeser & Pendleton, Inc., 613 Fort Worth Club Bldg., Fort Worth, Tex.
Pres., Charles F. Roeser
V. P.s, T. T. Pendleton, M. R. Young
Sec. and Treas., H. B. Owens
Gen. Supt., Marshall R. Young
Ch. Chemist, R. H. Locker
Pur. Agent, A. M. Brackett
Ch. Engr., R. H. Hammock
Pet. Engr., F. J. Roeser
Supt., C. A. Davis, Albany, Tex.
Plant in Texas
Capacity, 30,000

Rogers (R. G.), Oil Co., Oblong, Ill.
Plant in Illinois
Capacity, 35

Ryan & Hackett Co., Inc., 623 Taft Bldg., Los Angeles, Calif.
Pres., G. P. Ryan
V. P., H. A. Hackett
Sec. and Treas., J. H. Haring
Plant in California
Capacity, 3,000

S

Sabine Valley Gasoline Co., Inc., Shreveport, La.
Pres. & Gen. Mgr., H. R. Dickerson.
V. P., L. W. Dickerson
Sec., W. D. Wilson
Ch. Engr., H. H. Beeson
Supt., D. E. Farris, Longview, Tex.
Plant in Texas
Capacity 30,000

Sand Hill Lease, Tidioute, Pa.
Partnership
Supt., Alfred Peterson, R.F.D. 3, Tidioute, Pa.
Plant in Pennsylvania
Capacity, 100

St. Helens Petroleum Co., Ltd., Los Angeles, Calif.
Chm. of Bd., C. B. Stocken
Dirs., William Ivey, A. F. Strickland
Gen. Mgr., Charles Drader
Sec., R. H. Young
Gen. Supt., C. Z. Webb
Sales Mgr., C. N. Collins

CROSBY VALVES

THRU FIRE YET STILL DOING THEIR WORK

Actual photo of severe fire at Huntington Beach workings of Parkhill-Wade, Inc. This company uses Crosby Valves and Gages.

Faithful Servants of Industry

The two butane storage tanks at the right of the burning tank are equipped with Crosby Nozzle Type Safety Valves. At times they were completely enveloped in flames. They merely lifted and blew frequently for a few seconds, then promptly closed tight and secure. After the fire they were intact and still doing their work.

The ruined tank truck in foreground was also equipped with a Crosby Nozzle Type Safety Valve and was subjected to a temperature of approximately 700°F as witnessed by the fact that an industrial thermometer beside it in the dome was heated to such an extent that the glass was softened. After severe pressure tests this valve was found to be bottle-tight and undamaged, only to the extent of loss of temper in its spring.

Outer ruggedness and inner precision give Crosby Valves and Gages longer life under all conditions of service. They are most economical because replacement and maintenance expense are minimized.

Write today to Westcott & Greis, Inc., Tulsa, Oklahoma to have their engineers analyze your valve and gage requirements without obligation.

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WESTCOTT & GREIS, INC.

Tulsa, Oklahoma

Agents for

CROSBY STEAM GAGE & VALVE COMPANY, BOSTON, MASS.

"LIQUID" ASSETS

—Safeguard Them!

YOUR capital stored in tanks in the form of oil deserves the surest protection you can give it.

EXPERIENCE has proved, without exception, that tanks are safe when they are OCECO Equipped.

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Pur. Agt., W. C. Cowie
Ch. Chem., C. W. Spark
Ch. Egr., C. Z. Webb
Supts., C. Z. Webb, Box D, Pico, Calif.; Geo. C. Sproule, Box 248, Montebello, Calif.; J. A. Stotts, Box M, Taft, Calif.
Plants in California
Capacity, 3,250

Shamrock Oil & Gas Co., Amarillo Bldg., Amarillo, Tex.
Pres., J. J. Sheerin
V. P., H. C. Fownes II
Sec., W. E. Motheral
Tres., J. B. Orr
Gen. Supt., E. N. Armstrong
Ch. Chem., J. B. Orr, Jr.
Pur. Agt., H. D. Thompson
Supt., E. T. Broughton, Amarillo, Tex.
Plant in Texas
Capacity, 15,000

Shell Oil Co., 200 Bush St., San Francisco, Calif.
Pres., C. Legh-Jones
Sec., A. R. Bradley
Treas., John Lander
Pur. Agt., J. S. Story
Plants in California
Capacity, 256,000

Shell Petroleum Corp., Shell Bldg., St. Louis, Mo.
Pres., Alexander Fraser
V. P.s, Richard Airey, H. H. Anderson, J. W. Watson, Dr. W. Van Holst Pellekaan, G. S. Rollin, L. van Eeghen, T. E. Swigart, R. P. Bascom and J. F. Taylor
Sec., P. R. Chenoweth
Treas., J. W. Watson
Gen. Supt., S. S. Smith, Mayo Bldg., Tulsa, Okla.
Sales Mgr., L. van Eeghen
Pur. Agt., C. B. Singleton
Supts., M. R. Church, Braman, Okla.; J. L. May, Hobbs, N. Mex.; E. H. Ross, Drumright, Okla.; C. E. Haines, Pampa, Tex.; L. L. Lamar, Oxford, Kans.; C. E. Smith, Marshall, Okla.; E. F. Thoes, Maud, Okla.; S. W. Craig, Three Sands, Okla.
Plants in Oklahoma, Kansas, Texas and New Mexico
Capacity, 113,000

Signal Gasoline Co. of Texas, 811 West Seventh St., Los Angeles, Calif.
Pres., S. B. Mosher
V. P.s, R. H. Green, O. W. March
Sec., H. J. March
Treas., O. W. March
Gen. Supt., R. W. Heath
Sales Mgr., O. W. March
Pur. Agt., J. F. Thies
Ch. Egr., G. L. Young
Plant in Texas
Capacity, 50,000

Signal Hill Gasoline Co., 555 South Flower St., Los Angeles, Calif.
Pres., R. W. Walsh
V. P.s, A. M. Kelly, J. S. Wallace, R. D. Montgomery
Sec. and Treas., B. B. Wilson
Gen. Mgr., H. R. Linhoff
Ch. Chem., M. L. Arnold
Pur. Agt., B. J. Mahaffy
Supts., M. D. Martin, Box K, Taft, Calif., C. E. Gotterba, Bin "W", Long Beach, Calif.
Plants in California
Capacity, 82,000

Signal Oil & Gas Co., 8111 West Seventh St., Los Angeles, Calif.
Pres., S. B. Mosher
V. P.s, R. H. Green, O. W. March
Sec., H. J. March
Treas., O. W. March
Gen. Supt., R. W. Heath
Sales Mgr., O. W. March
Pur. Agt., J. F. Thies
Ch. Egr., G. L. Young
Supts., J. G. Hill, Long Beach, Calif.; A. Kittleberger, Long Beach, Calif.
Plant in California
Capacity, 85,000

Silurian Oil Co., Missouri Pacific Bldg., St. Louis, Mo.
Pres., B. O. Mahaffey
V. P., C. F. Buchner
Sec. and Treas., E. R. Christman
Gen. Supt., Dee Miller
Ch. Egr., R. E. Hilpert
Supts., J. B. Crisman, Tulsa, Okla.; E. O. Bishop, Avant, Okla.
Plant in Oklahoma
Capacity, 1,200

Sinclair Prairie Co., Sinclair Bldg., Tulsa, Okla.
Pres., H. L. Phillips
V. P., W. W. Baker
Sec. and Treas., A. E. Barrus
Asst. Treas., H. M. Coulson
Gen. Supt., C. L. Brown
Sales Mgr., A. T. Scherer
Pur. Agt., H. A. Woodard
Ch. Chem., J. L. Gallagher
Ch. Egr., E. A. Wooden
Supts., Lewis Snyder, P. O. Box 68, Cleveland, Okla.; G. H. Youker, R. F.D. 1, Drumright, Okla.; W. D. Dolan, Box 578, Shamrock, Okla.; B. C. Sharrett, Box 368, Covington, Okla.; L. M. Kelsey, Box 6, Shidler, Okla.; L. N. Yates, Box E, Kenbre, Kans.; F. B. Pearce, Box 865, Seminole, Okla.; L. F. Knuland, Box 787, Seminole, Okla.; L. C. Van Cleave, Box 4188, Oklahoma City, Okla.; K. R. Elliott, Box 80, St. Louis, Okla.; C. J. Tighe, Box 1674, Longview, Tex.; V. H. Akers, Box 297, Sasakwa, Okla.
Plants in Oklahoma, Kansas, Texas and Wyoming
Capacity, 376,200

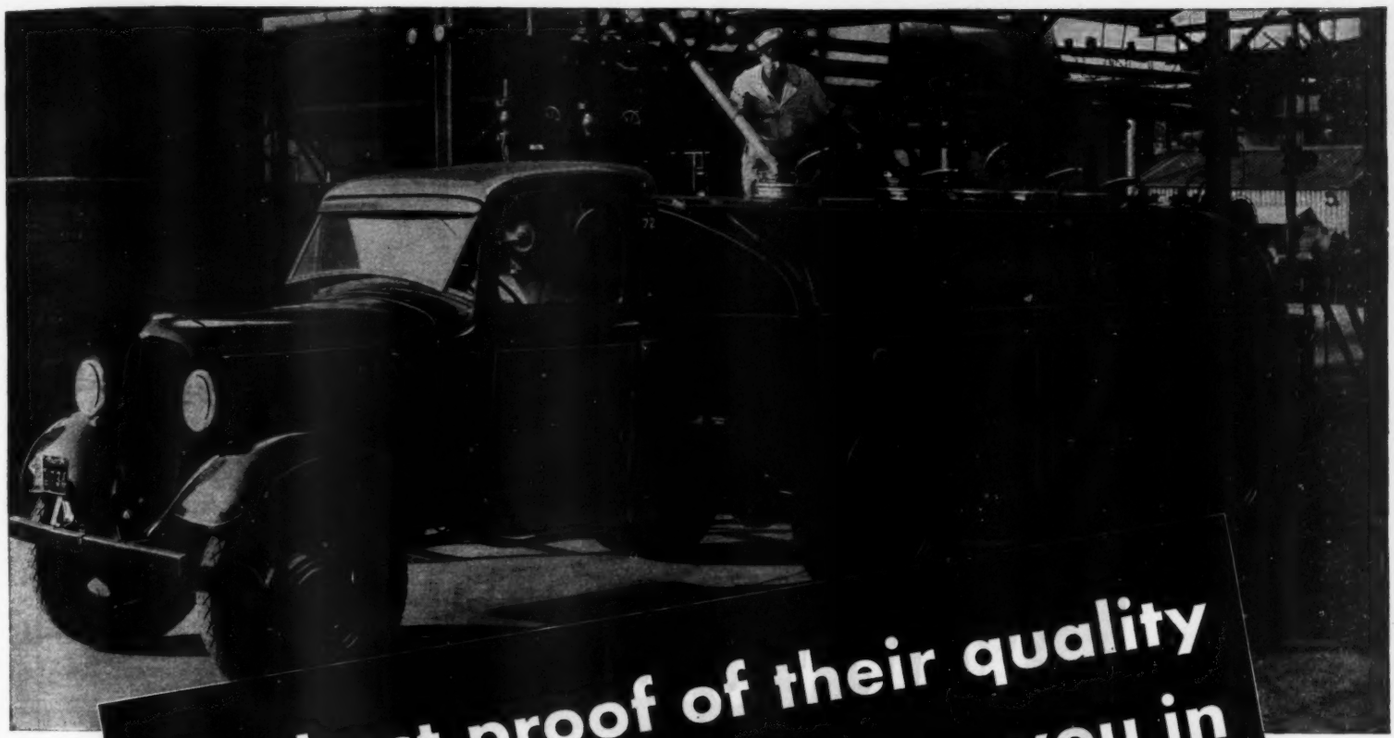
Skelly Oil Co., Fourth & Boulder, Tulsa, Okla.
Pres., W. G. Skelly
V. P.s, C. C. Herndon, H. M. Stalcup, R. T. Lyons, W. T. Atkins
Sec. and Treas., F. T. Hopp
Sales Mgr., W. T. Atkins
Pur. Agt., F. W. Robertson
Gen. Supt., J. W. Vaiden.
Supts, E. K. Anderson, Box 157, Lyman, Okla.; L. Barrett, Box 536, Seminole, Okla.; A. H. Bazell, Box 816, Burkburnett, Tex.; J. E. Carlson, Box 127, Skellytown, Tex.; M. S. Pike, Box 336, Whittenburg, Tex.; C. N. Smith, Box 413, Wynona, Okla.; C. A. Holmes, Box 168, Slick, Okla.; G. E. Canady, Box 27, Skellytown, Tex.; C. P. Duvall, Box 236, Cunningham, Kans., G. E. Canady, Box 36, Route 2, Jennings, Okla.; John Rush, Box 487, Fairfax, Okla.; L. A. Snodgrass, Box 178, Stinnett, Tex.
Plants in Oklahoma, Texas and Kansas
Capacity, 117,250

Sloan & Zook Co., 101 Main St., Bradford, Pa.
Pres., R. T. Zook
V. P., W. J. Sloan
Sec., C. T. Rickerson
Treas., W. J. Sloan
Gen. Supt. and Sales Mgr., Paul H. Zook, Kane, Pa.
Pur. Agt., C. W. McIntosh
Supt., T. J. Johnson, Kane, Pa.
Plant in Pennsylvania
Capacity, 1,500

Smith Brothers Refining Co., McLean, Tex.
Pres., Vester Smith
V. P., Porter Smith
Sec. and Treas., P. J. Coffey
Plant in Texas
Capacity, 40,000

Snowden & McSweeney Co., 598 Madison Ave., New York City
Pres., H. McSweeney
V. P., J. P. Shannon
Sec., Pearl M. Snowden
Treas., Marie H. Wright
Gen. Supt., A. E. Baldwin
Supt., A. E. Baldwin, Bridgeport, Ill.
Plant in Illinois
Capacity, 1,000

South Penn Oil Co., Chamber of Commerce Bldg., Pittsburgh, Pa.
Pres., P. H. Curry
V. P.s, F. J. Huffman, C. B. Turner
Sec., John L. Hays



The best proof of their quality is the money they save you in HAULAGE COSTS

CHEVROLET Put Chevrolet six-cylinder trucks on the job and you can be sure you will get low operating costs! Chevrolet quality manufacture stands squarely behind this statement of fact. Examine a Chevrolet truck—from husky rear axle to efficient cooling system—and you will find quality materials and precision construction in every part. The result is vital savings for you—*fuel savings* from the famous Blue-Flame valve-in-head truck engine, and *maintenance savings* from the rugged chassis. You have every reason to register *more* payload hours—and *more profitable* payload hours—when Chevrolet trucks go to work for you!

CHEVROLET MOTOR COMPANY, DETROIT, MICH.

Compare Chevrolet's low delivered prices and easy G.M.A.C. terms. A General Motors Value

WORLD'S LOWEST-PRICED TRUCKS

CHEVROLET TRUCKS

FREE! Mail coupon for
"OWNER'S SIMPLIFIED OPERATING RECORD"

Chevrolet Motor Company (Dept. 25A)
Detroit, Michigan

Gentlemen: Without obligation on my part, send me the "Owner's Simplified Operating Record" booklet which enables truck owners to learn operating costs quickly and accurately.

Name and title _____

Company _____

Address _____

MOBILOIL SCORES 2ND NATION-WIDE VICTORY IN SIX MONTHS

New Mobiloil Grades Sell Fast as Motorists make Annual Spring Oil Change

IT'S HAPPENED AGAIN! For the second time in six months . . . dealers are chalking up record sales. Mobiloil is winning another outstanding success!

Last Winter Socony-Vacuum's sensational Clearosol Process won well over 3,000,000 customers with the new Mobiloil Arctic.

Now this same famous process is again giving motorists from Coast to Coast what they want . . . a new kind of Summer oil that won't thin out dangerously, gum valves or rings or form hard carbon.

Features Help Sell New Oil

With these unusual features as sales points, dealers are finding it a simple matter to convince customers—to sell them the new Summer Mobiloil . . .

. . . millions who used Mobiloil Arctic last Winter are already coming back to get the new Mobiloil for their Spring oil change . . .

. . . thousands of additional motorists who have heard of Mobiloil Arctic are now trying this new kind of Summer oil . . .

. . . it's a money-saver to thousands who travel constantly for business—who go touring for pleasure all Summer long!

No wonder this new Summer Mobiloil is giving dealers their biggest Spring business in years!

Get Your Share Now!

Socony-Vacuum's nation-wide advertising in magazines, in newspapers throughout the country has helped to put the story across.

It is helping Mobiloil dealers by bringing more Spring customers into their stations for oil changes than they've had in years!

There's still time for you to get *your* share of this Spring business. Find out now about the many unusual advantages that are offered by a Socony-Vacuum dealership!

SOCONY-

INCOR

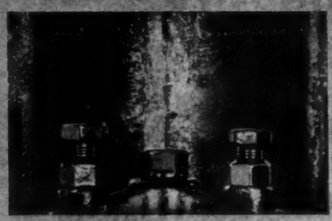
THESE FACTS SELL NEW SUMMER MOBILOIL

CONSUMPTION—Numerous tests, scientifically conducted, have shown that the rate of oil consumption of the new Mobiloil is lower than ever before thought to be possible.

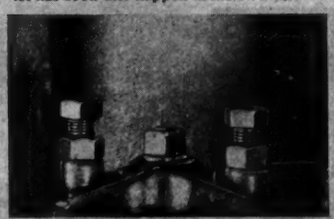
GUMMING—Tests more severe than any driving condition show that Mobiloil resists gumming to a greater degree than any other high-grade oil available for comparison.

THINNING—Mobiloil has shown, under severe tests, a superior resistance to thinning. This enables motorists to get the fullest possible protection under the most severe conditions of hard Summer driving.

HERE'S WHAT ACTUAL RUNNING TESTS SHOWED ABOUT MOBILOIL



100 HOURS of operation on ordinary oil did this! The engine valve-chamber was left dirty . . . coated with gum formed by impurities in the oil that ordinary refining methods couldn't eliminate. Every motorist has seen this happen in his own car.



AFTER 100 HOURS on the new Mobiloil, under conditions identical with those used throughout the above test, this engine remained clean. Here's another argument in favor of this new kind of Mobiloil—and another sure sales-maker for dealers!

VACUUM OIL CO.
PORATED

SOCONY-VACUUM

Treas., T. B. Judge
Pur. Agt., W. P. Wissner
Gen. Mgr., C. F. Stevenson
Ch. Chem. and Egr., H. J. Little
Plants in West Virginia and Pennsylvania.
Capacity, 25,000

Standard Oil Co. of Louisiana, New Orleans, La.
Pres., J. C. Hilton
V. P.s, A. K. Gordon, H. H. Hewetson, J. E. Skehan
Sec. and Treas., A. K. Gordon
Gen. Mgr., W. L. Stratton, Shreveport, La.
Gen. Supt., R. A. Howe, Shreveport, La.
Plants in Louisiana and Arkansas
Capacity, 33,650

Stanolind Oil & Gas Co., Philcade Bldg., Tulsa, Okla.
Pres., F. O. Prior
V. P.s, A. M. McCorkle, E. F. Bullard and G. H. Jaques
Sec. and Treas., F. J. Keleher
Gen. Supt., H. W. Klein
Pur. Agt., W. L. James
Ch. Chem., O. W. White
Supts., H. U. Jarrett, Tonkawa, Okla.; R. W. Davis, Gilliam, La.; A. C. Anders, Midwest, Wyo.; T. E. Keefer, Elk Basin, Wyo.
Plants in Oklahoma, Louisiana and Wyoming
Capacity, 148,000

State Gasoline Corp., 900 Spring Arcade Bldg., Los Angeles, Calif.
Pres., J. W. Jameson
V. P., M. P. Simon
Sec. and Treas., S. W. McComb
Gen. Supt., K. G. Steinbeck
Plants in California
Capacity, 57,500

Sterling Oil & Gas Co., 506 Thompson Bldg., Tulsa, Okla.
Pres., C. H. Petry
V. P. and Gen. Mgr., W. S. Duty
Sec. and Treas., A. E. Schmitz
Div. Supt., T. T. Curtis
Plant in Oklahoma
Capacity, 250

Stranahan & Cheuvront, 405 West Main St., Oblong, Ill.
Sec. and Treas., A. B. Cheuvront
Pur. Agt., A. B. Cheuvront
Supt., J. F. Brown, 408 W. Main St., Oblong, Ill.
Plant in Illinois
Capacity, 55

Southland Gasoline Co., 417 West Sixth St., Tulsa, Okla.
Pres., B. J. Arbon
V. P., H. M. Preston
Sec. and Treas., B. J. Arbon
Plant in Oklahoma
Capacity, 2,000

Standard Gasoline Co., 225 Bush St., San Francisco, Calif.
Pres., K. R. Kingsbury
V. P.s, W. H. Berg, R. W. Hanna, A. S. Russell
Sec., J. H. Tuttle
Treas., V. F. Palmer
Plants in California
Capacity, 754,555

Success Oil Co., 503 West Elm St., Titusville, Pa.
Pres., Geo. H. Davis
Gen. Supt., A. Porter, Sr.
Ch. Egr., A. Porter, Jr.
Plant in Pennsylvania
Capacity, 2,000

Sunray Oil Co., 740 Philcade Bldg., Tulsa, Okla.
Pres., C. H. Wright
V. P., F. L. Martin
Sec., W. D. Forster
Treas., L. W. Burnett
Gen. Supt., J. E. Thompson
Sales Mgr., F. L. Martin
Supt., J. E. Thompson, Sunray, Tex.
Ch. Chem., J. B. Fairfield
Plant in Texas
Capacity, 18,000

Superior Oil Co., 1101 Nat'l City Bank Bldg., Los Angeles, Calif.
Pres., W. M. Keck
V. P.s, J. P. Chandler, Chas. A. Dore and W. A. Pruett
Sec. and Treas., J. P. Chandler
Asst. Treas., Howard W. Wright
Asst. Secs., F. D. Jones, Virgil L. Smith
Pur. Agt., Geo. H. Barry
Plants in California
Capacity, 113,000

Surety Oil Co., Titusville, Pa.
Plant in Pennsylvania
Capacity, 1,000

Sutton Brothers, Inc., 1370 Ridge Ave., Steubenville, Ohio
Pres., H. L. Sutton
V. P., C. E. Sutton
Sec. and Treas., N. A. Sutton
Plant in West Virginia
Capacity, 200 (shut down)

T

Tarbell & Co., Grand Valley, Pa.
Plant in Pennsylvania
Capacity, 80

Test Oil Co., Bartlesville, Okla.
Pres., M. R. Moran
Plant in Oklahoma
Capacity, 500

Texas Carbon Industries, Inc., Box 507, Sayre, Okla.
Pres., T. J. Butler
V. P., C. K. Springfield
Sec., James E. Allison
Treas., Tom Nelson
Gen. Supt., W. F. Seeger
Supt., Herman Cornett, Breckenridge, Tex.
Plant in Texas
Capacity, 6,000

Texas Co., General Offices: 135 E. 42nd St., New York City
Chm. of Bd., C. B. Ames, New York City
Ch. Exec. Com., J. H. Lapham
Pres., W. S. S. Rodgers
V. P.s, T. J. Donoghue, F. T. Manley, G. L. Noble, R. Ogarrio, T. Rieber and H. W. Dodge
Sec., E. M. Crone
Treas., C. E. Woodbridge
Pur. Agt., A. F. Colling
Supts., M. J. Adams (North Tex. Div.) Wichita Falls, Tex.; T. F. O'Brien (West Tex. and N. Mex. Div.), Cisco, Tex.; J. L. Shea (La. and Ark. Div.), Shreveport, La.; C. C. Kelly (Okla. and Kans. Div.), Tulsa, Okla.
Plants in Oklahoma, Texas, Kansas and Louisiana
Capacity, 133,800

Texas Co., California, 929 So. Broadway, Los Angeles, Calif.
Pres. and Gen. Mgr., C. E. Olmstead
V. P.s, J. A. Bermingham, H. W. Dodge, R. T. Herndon, L. R. Holmes
Gen. Coun., C. C. Stanley
Sec., E. M. Crone
Treas., C. E. Woodbridge
Sales Mgr., R. T. Herndon
Supts., H. S. Cole, Jr., Asst. Gen. Supt., 929 So. Broadway, Los Angeles, Calif.; N. H. Mull, Supt. of Gasoline Plant Operations, Los Angeles, Calif.
Plants in California
Capacity, 185,000

Texas Pacific Coal & Oil Co., 1710 Fort Worth National Bank Bldg., Fort Worth, Tex.
Pres., J. R. Penn
V. P.s, Dr. E. R. Lederer, O. E. Mitchell and John Hancock
Sec. and Treas., R. Seibel
Chg. of Mfg., Dr. E. R. Lederer
Sales Mgr., O. E. Mitchell
Pur. Agt., H. H. Pruitt
Ch. Chem., N. E. Zachariah
Ch. Egr., W. E. Skelton
Supts., D. B. Hiatt, Thurber, Tex.; Jack White, Strawn, Tex.; C. S. Bronsteadt, Caddo, Tex.
Plants in Texas
Capacity, 35,000

Texoma Natural Gas Co., 20 North Wacker Drive, Chicago, Ill.
Pres., Judge H. O. Castor
V. P. and Gen. Mgr., Floyd C. Brown
Asst. Sec., S. E. Campbell
Asst. Treas., F. K. Macdonald
Gen. Supt., E. V. Kesinger
Pur. Agt., L. E. Biggs
Ch. Chem., E. G. Hammerschmidt
Ch. Egr., G. M. Davidson
Supt., R. T. Powers, P. O. Box 36, Fritch, Tex.
Plant in Texas
Capacity, 60,000

Thomas, R. L., 290 Main St., Tidioute, Pa.
Owner, R. L. Thomas
Plant in Pennsylvania
Capacity, 250

Tompsett Brothers, Tidioute, Pa.
Pres., W. C. Tompsett
Plant in Pennsylvania
Capacity, 500

American
Hammered
PISTON RINGS

For Severe Service in the Oil Industry

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NATIONAL OIL & GAS POWER DIVISION A. S. M. E.
Hotel Mayo, Tulsa, Okla.
May 8th to 11th, 1935

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Triangle Co., Box 100, McKees Rocks, Pa.
Pres., J. B. Montgomery
Sec., Bert Noble
Treas., S. H. Morgan
Sales Mgr., Bert Noble
Pur. Agt., Bert Noble
Ch. Egr., A. A. Bock
Plant in Pennsylvania
Capacity, 450

Triumph Petroleum Co., Route 3, Tidioute, Pa.
Co-partnership
E. R. Johnson, one of partners
Plant in Pennsylvania
Capacity, 175

Tuel & Thoenen, National Bank Bldg., Sistersville, W. Va.
Supt., Manford Tuel, Sistersville, W. Va.
Plant in Ohio
Capacity, 200

Tyler Oil Co., Sistersville, W. Va.
Pres., H. J. Crawford
V. P., J. P. Flynn
Sec., Nell B. McCoy
Gen. Supt., J. P. Flynn
Plants in West Virginia and Ohio
Capacity, 149

U

Union Gas System, Inc., Nat'l Bank Bldg, Independence, Kans.
Pres., Paul R. Johnson
V. P., D. W. Stewart
Sec., D. W. Stewart
Treas., H. F. Mitchell
Gen. Supt., L. J. Love
Ch. Egr., F. L. Rupp
Pur. Agt., W. L. Orr
Plant in Kansas
Capacity, 2,000 (shut down)

Union Gasoline & Oil Corp., Kanawha Valley Bldg., Charleston, W. Va.
Plants in West Virginia
Capacity, 8,280

Union Gas Products, Inc., 710 Ouachita Bank Bldg., Monroe, La.
Pres., D. S. Lansden
V. P., C. M. Rose
Sec., Henry Bernstein
Treas., D. S. Lansden
Gen. Supt., H. C. Walton
Pur. Agt., H. C. Walton
Plant in Louisiana
Capacity, 6,000

Union Oil Co. of California, 617 West Seventh St., Los Angeles, Calif.
Pres., L. P. St. Clair
V. P.s, R. D. Mathers, W. W. Orcutt, W. L. Stewart, Jr. and P. M. Gregg
Sec., W. R. Edwards
Treas., J. M. Rust
Dir. of Mfg., R. E. Haylett
Gas Mgr., R. D. Gibbs
Director of Sales, V. H. Kelly
Mgr. of Research, D. R. Merrill
Mgr. of Purch., H. C. Farquhar
Supts., Lafe Todd (Northern Div.), San Luis Obispo, Calif.; J. C. Rector (Southern Div.), Santa Fe Springs, Calif.
Plants in California
Capacity, 154,750

United Carbon Co., Union Bldg., Charleston, W. Va.
Pres., Oscar Nelson
V. P.s, G. A. Williams, Clarksburg, W. Va.; H. C. Pearson and T. F. Koblegard, Weston, W. Va.
Sec., C. H. McHenry, Monroe, La.
Treas., T. A. Whalen, Weston, W. Va.
Gen. Supt., W. W. Engstrom, Monroe, La.
Pur. Agt., C. A. Urban
Ch. Chem., G. L. Roberts
Ch. Egr., H. E. Norrick, Monroe, La.
Supts., H. Balch, Swartz, La.; T. Miller, Swartz, La.; A. J. MacKinnon, Swartz, La.; Tom Motley, Monroe, La.; J. M. Eldridge, Monroe, La.; C. M. Peters, Monroe, La.; E. L. Barron, Alto, La.; W. F. Seegear, Sayre, Okla.; Herman Cornett, Breckenridge, Tex.
Plants in Louisiana, Oklahoma and Texas
Capacity, 24,000

United Gas Public Service Co., Rusk Bldg., Houston, Tex.
Pres., N. C. McGowen, Shreveport, La.
V. P.s, R. H. Hargrove, J. V. Strange
Comptroller, S. L. Davis
Sec., W. M. Rice
Treas., L. V. Tracht
Gen. Supt., W. F. Fulton
Pur. Agt., R. A. Reeder
Ch. Chem., W. F. Fulton
Ch. Egr., A. D. Greene
Supts., H. S. Ridings, Cotton Valley, La.; L. O. Lawless (Latex), Bethany, La.; A. Meeks (Sugar Creek), Athens, La.; F. C. Dugan, Refugio, Tex.; O. M. Campbell, Archibald, La.; J. L. Gilbert, Myrtis, La.
Plants in Louisiana and Texas
Capacity, 196,800

Universal Consolidated Oil Co., 555 Flower St., Los Angeles, Calif.
Pres., R. D. Montgomery
V. P.s, E. G. Starr, R. E. Stearns
Sec. and Treas., J. S. Wallace
Gen. Supt., Geo. A. Coffey
Pur. Agt., P. J. Hayes
Pet. Eng., G. S. Follansbee, Jr.
Supts., F. V. Falenzer, Box B, Oilfields, Calif.; L. F. Barrows, Lost Hills, Calif.
Plant in California
Capacity, 2,000 (shut down)

V

Victor Gasoline Co., 624 So. Cheyenne Ave., Tulsa, Okla.
Pres., M. F. Powers
V. P., C. P. Quinlan
Sec., J. L. Goddard
Treas., Felix Quinlan, Jr.
Gen. Supt., M. F. Powers
Sales Mgr., E. C. Sager
Pur. Agt., Chas. Buthod
Ch. Chem., J. W. Edwards
Ch. Egr., F. G. Heinze
Supts., L. J. Rush, Bristow, Okla.; D. B. Gilmore, Stroud, Okla.
Plants in Oklahoma
Capacity, 10,000

Viking Distributing Co. (Same Offices as Virginian Gasoline & Oil Co.)
Plants in West Virginia
Capacity, 1,000

Vincennes Oil & Gas Co., Vincennes, Ind.
Pres., E. M. Kerlin
V. P., C. E. Kerlin
Sec. and Treas., R. D. Green
Gen. Supt., R. C. Kerlin
Supt., Homer Means, Route 4, Lawrenceville, Ill.
Plant in Illinois
Capacity, 2,000

Virginian Gasoline & Oil Co., Kanawha Valley Bldg., Charleston, W. Va.
Pres., Chas. A. Munroe
V. P.s, James L. Harrop, Chas. F. Huff, Ralph N. Parks
Sec., Leith V. Watkins
Treas., N. E. Shupe
Sales Mgr., R. N. Parks
Supts., W. L. Haynes, Clendenin, W. Va.; W. H. Evilsizer, Villa Route, Box 8, Charleston, W. Va.; C. R. Smith, R.F.D. No. 2, Box 240, St. Albans, W. Va.; Geo. Kiser, Hubball, W. Va.; C. H. Copenhaver, Stoffel, W. Va.; Owen Wheeler, R.F.D. No. 1, Catlettsburg, Ky.; Geo. S. Robinson, Box 162, Mammoth, W. Va.; R. A. Cyrus, Ona, W. Va.; H. W. Critchfield, Sandyville, W. Va.; Ray Grabeel, Box 292, Louisa, Ky.; W. F. Burdette, Three Mile, W. Va.; Silas Clark, Pad, W. Va.; S. M. Pittman, R.F.D. No. 1, Box 82, Charleston, W. Va.; Harry F. Haught, Box 388, Spencer, W. Va.; M. H. Griffith, Kermit, W. Va.
Plants in West Virginia and Kentucky
Capacity, 198,300

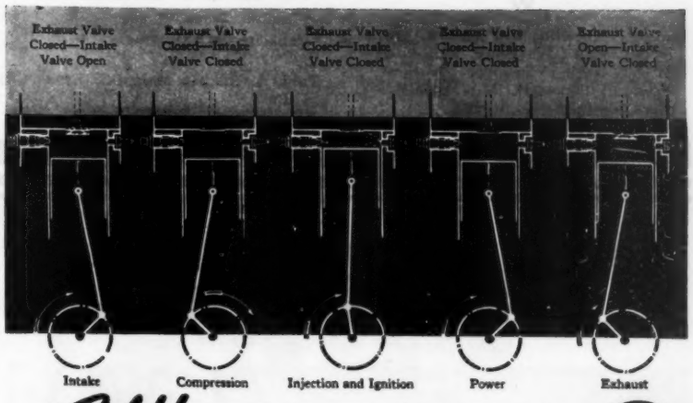
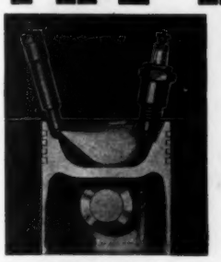


Diagram of the Hesselman Cycle

Why
THE HESSELMAN
starts easily


The location of the rings provides an unobstructed path for heat flow from the head to the skirt.

It is as easy to start a Waukesha-Hesselman Oil Engine as a gasoline engine. A primer is used as with a gasoline engine and hand cranking is just as feasible. The primer atomizes and sprays a small charge of priming gasoline into the air intake manifold. And the charge flows readily into the cylinder through the overhead valves.

The cup shaped Hesselman piston head, which forms the combustion chamber, catches and retains any excess priming charge. And it is burned instead of destroying the cylinder wall lubricating film.

The Hesselman piston head is designed with extra metal. This aids in supplying and holding sufficient heat to insure a combustible mixture at the spark plug. As soon as the engine fires, it begins to function on fuel oil. Even in the coldest weather, a Hesselman requires no more priming, nor any longer warm-up period than a gasoline engine.

Write for Bulletin 1000. Waukesha Motor Company, Waukesha, Wisconsin.

THIS IS NO. 4 OF A SERIES on the Hesselman Oil Engine. No. 5 will appear in an early issue. A reprint of the complete series will be mailed on request.

WAUKESHA ENGINES

W

Waggoner Gasoline Co., Electra, Tex.
Pres., W. T. Waggoner, Sr.
V. P., G. L. Waggoner
Sec. and Treas., E. P. Waggoner
Gen. Supt., A. E. Stuard
Sales Mgr., H. D. Jenkins
Pur. Agt., J. T. McNamara
Plant in Texas
Capacity, 20,000

Wahl, A. R., 249 Main St., Evans City, Pa.
Owner, A. R. Wahl

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A LARGE producer in Texas is doubling and tripling the production of old wells by thorough reconditioning with Star Machines. Star Machines do a *complete* job of reconditioning—pulling pipe, fishing-out parted tubing, plugging, swabbing, cleaning-out, bailing and drilling deeper—and do it to perfection. They are also ideal for drilling in rotary wells and getting ready for production. Being completely self-contained they save much time and material. Tearing down, moving and rigging-up becomes a matter of hours instead of days. Star Machines can be used under standard derricks, or with masts. The No. 45 Star Super Spudder shown above provides 4000-foot cleaning-out capacity, fast operation and plenty of reserve power for emergencies. There is a Star machine to fit your needs exactly. Write for details.

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HEILAND RESEARCH CORPORATION
LICENSED GEOPHYSICAL ENGINEERS
CLUB BLDG. DENVER, COLO.

Gen. Supt. and Pur. Agt., Chester Wahl
Plant in Pennsylvania
Capacity, 150

Warner-Caldwell Oil Co., Second National Bank Bldg., Titusville, Pa.
Pres., Alex N. Warner
V. P., J. H. Caldwell, Jr.
Sec. and Treas., Floyd August
Gen. Supt., P. C. Hatfield, Okla.; Alex N. Warner, Pa.
Supts., Roy Porter, R.F.D., Nowata, Okla.; Ferman Van Winkle, Pumpkin Center, Okla.; Glen Albert, R. F.D., Nowata, Okla.; F. O. Merrill, R. F. D., Nowata, Okla.; John T. Dalton, R.F.D. 2, Titusville, Pa.
Plants in Oklahoma and Pennsylvania
Capacity, 5,600

Warren Petroleum Co., 2001 National Bank of Tulsa Bldg., Tulsa, Okla.
Pres., W. K. Warren
V. P., J. A. La Fortune
Sec., H. E. Felt
Treas., A. J. Murphy
Gen. Supt., E. H. Short
Sales Mgr., J. A. La Fortune
Ch. Chem., S. S. Allender
Pur. Agt., A. J. Murphy
Also owns interest in J. E. Crosbie, Inc., Holdenville, Okla., plant and American Natural Gasoline Co. plant at Ramsdell, Tex.
Plants in Oklahoma
Capacity, 50,000

Washington Development Co., 715 Central Bldg., Wichita, Kans.
Pres., L. W. Cary
V. P., E. C. Joullian
Sec. and Treas., J. W. Metcalfe
Gen. Supt., C. S. Worley
Sales Mgr., C. S. Worley
Supt., W. H. Shaffer, Wellington, Kans.
Plant in Kansas
Capacity, 12,000 (shut down)

Wentz, L. H. (Oil Division), Ponca City, Okla.
Gen. Supt., O. H. Schoenwald
Pur. Agt., S. C. Harkness
Plants in Oklahoma
Capacity, 4,500

West Coast Refining Co., 1320 Pacific Finance Bldg., Los Angeles, Calif.
Pres., A. H. Bradford
V. P., M. D. Schatzman
Sec. and Treasurer, W. B. Ogden
Gen. Supt., W. M. Bradford
Supt., B. M. Hennessey, Placentia, Calif.
Plant in California
Capacity, 50,000

Western Oil Corp. of Texas, Philcade Bldg., Tulsa, Okla.
Pres., J. F. Darby
V. P., Carl Pursel
Sec. and Treas., C. F. Lynde
Supt., J. R. Gilbert, Electra, Tex.
Plant in Texas
Capacity, 2,000

Western States Gasoline Corp., 609 So. Grande Ave., Los Angeles, Calif.
Pres. and Treas., C. R. Gallagher
V. P., E. McGowan
Sec., G. C. O'Connell
Gen. Supt., W. N. Roper, Box 7, Avenal, Calif.
Pur. Agt., C. E. Spangler
Plant in California
Capacity, 160,000

Westoak Gasoline Co., Box 507, Sayre, Okla.
Pres., T. J. Butler
V. P., W. F. Seeger
Sec. and Treas., Ewell Nalle
Gen. Supt., E. Adams
Pur. Agt., W. F. Seeger
Ch. Egr., Grover M. Hardy
Plant in Oklahoma
Capacity, 7,000

West Texas Gas Co., Lubbock, Tex.
Pres., A. R. Jones
V. P.s, R. F. Hinchey, H. A. Meyer, M. O. Snyder
Sec. and Treas., George Baird
Gen. Supt., E. C. Wagner
Pur. Agt., E. D. Parker
Supt., John LeGate, Lubbock, Tex.

Wheeler, D. H., Box 86, Petrolia, Pa.
Plant in Pennsylvania
Capacity, 200

Wilcox (H. F.), Oil & Gas Co., 310 W. Sixth St., Tulsa, Okla.
Pres., Homer F. Wilcox
V. P. and Gen. Mgr., G. A. Dye
V. P. and Gen. Supt., F. H. Dunn
V. P. and Treas., M. P. Appleby
Sec., L. J. Yarbrough
Sales Mgr., L. G. Murrell
Pur. Agt., H. B. Ward
Ch. Chem., W. M. Fraser
Ch. Egr., W. R. Bingham
Supt., J. A. Berry, Box 398, Pampa, Tex.
Plants in Oklahoma and Texas
Capacity, 8,000

Wilshire Oil Co., Inc., 2455 East 27th St., Los Angeles, Calif.
Pres., Alfred P. Machris
Gen. Supt., W. D. Smith
Sales Mgr., M. M. Fletcher
Pur. Agt., A. Pateracki
Ch. Chem., T. B. Gates
Supts., T. B. Gates, 2455 E. 27th St., Los Angeles, Calif.; Mr. Seppi, 2455 E. 27th St., Los Angeles, Calif.; W. D. Smith, 2455 E. 27th St., Los Angeles, Calif.
Plant in California
Capacity, 110,000

Wirt Franklin Petroleum Corp., Ardmore, Okla.
Operating under Trusteeship
Pres., Wirt Franklin
V. P.s, F. M. Porter, Walter Gant and Chester Franklin
Sec. and Treas., E. Galt
Gen. Supt., R. R. Owens
Sales Mgr., Chester Franklin
Pur. Agt., R. R. Owens
Ch. Chem., D. E. Logan
Ch. Egr., R. R. Owens
Supts., Chas. Chaney, care of Wirt Franklin Pet. Corp., Oklahoma City, Okla.; J. F. Looker, care of Wirt Franklin Pet. Corp., Oklahoma City, Okla.
Plants in Oklahoma
Capacity, 50,000

Wirt Gasoline Co., 91 Main St., Bradford, Pa.
Pres., Nathan Nichols
Sec., Charles Nichols
Treas., Nathan Nichols
Gen. Supt., Charles Nichols
Ch. Egr., L. L. Hardman
Supt., John Gould, Bolivar, N. Y.
Plant in New York

Wiser Oil Co., Trico Bldg., Sistersville, W. Va.
Pres., W. L. Sutton
V. P.s, A. C. Jackson and M. B. Hutchison
Pur. Agt. and V. P., E. Arthur Durham
Sec., L. E. Gregg
Treas., P. W. Neuenschwander
Supts., H. G. Ellis, Bartlesville, Okla.; H. J. Brooks, Alluwe, Okla.
Plant in Oklahoma
Capacity, 2,100

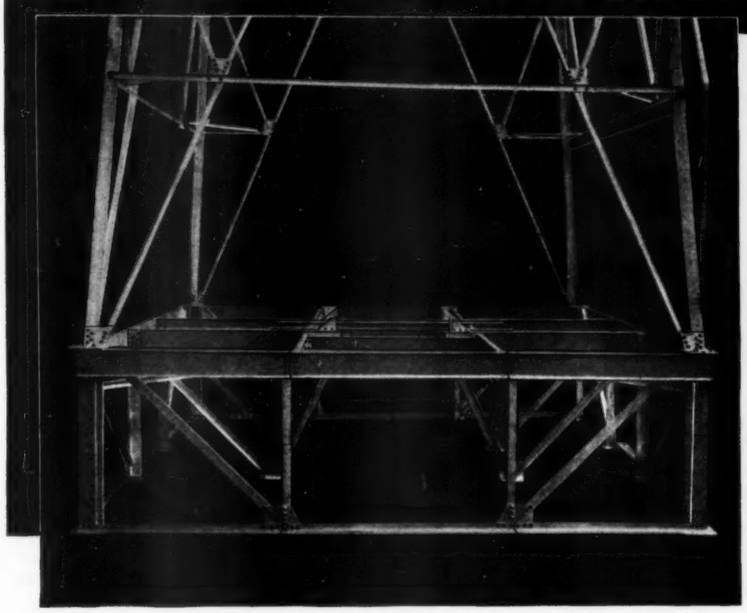
Wolverine Petroleum Corp., Shell Bldg., St. Louis, Mo.
Pres., Alexander Fraser
V. P.s, J. W. Watson and H. H. Anderson
Sec. and Treas., P. R. Chenoweth
Pur. Agt., C. B. Singleton
Supts., S. U. Young, Dillard, Okla.; R. R. Dollins, Avant, Okla.; R. R. Dollins, Wilson, Okla.
Plants in Oklahoma
Capacity, 18,500

Wright (J. H.), Estates, Sapulpa, Okla.
Executrix, Rosa B. Wright
Gen. Supt., A. B. Nigh
Sales Mgr., M. L. Murphy
Ch. Chem., A. B. Nigh
Ch. Egr., A. B. Nigh
Plant in Oklahoma
Capacity, 5,000

"From the ground UP"

M.I.W. STEEL DERRICKS

ARE BUILT FOR STRENGTH and SERVICE



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"The best damn Sub-Structure I ever saw. I can put it up with my eyes shut." This comment by a Texas rig builder rather forcefully, perhaps, but in no uncertain terms expresses the opinion of every man who buys, erects or works around a M.I.W. Sub-Structure. The driller on the same well said, "It's the best Sub-Structure I ever worked around that had plenty of room to work in without bumping my head frequently."

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Main Office and Plant
Muskogee, Oklahoma

807 Marine Bldg.
Houston, Texas

1935 Survey of Natural Gasoline Plants in the United States

STAR (*)—PLANT SHUT DOWN; ABSP.—ABSORPTION; COMP.—COMPRESSION; C-A—COMPRESSION ABSORPTION; CHAR.—CHARCOAL

ARKANSAS

Company and plant address—	Field location—	Type of plant	Daily cap'y (gals.)
Arkansas Natural Gas Corp., El Dorado	Sec. 31-17s-15w	C-A	5,000
Gulf Refining Co. of Louisiana, El Dorado	El Dorado south field	Absp.	4,000
Henderson Co., El Dorado	El Dorado	C-A	20,000
Henderson Co., El Dorado	9 mi. NE El Dorado	C-A	20,000
Imperial Oil & Gas Products Co., Smackover	Smackover	Comp.	500
Magnolia Petroleum Co., Kenova	Sec. 8-15-16, Union County	Absp.	3,800
Reserve Development Co., Tulsa	Louana	Absp.	5,000
Rainbow Gasoline Co., Tulsa	Sec. 10-17-14	C-A	20,000
Standard Oil Co. of Louisiana	El Dorado, 3 mi.	C-A	10,650
Standard Oil Co. of Louisiana	Smackover, 3 mi.	C-A	1,300

CALIFORNIA

Company and plant address—	Field location—	Type of plant	Daily cap'y (gals.)
American Natural Gasoline Corp., Santa Maria	Santa Maria Field	Absp.	7,500
Bankline Oil Co., Willow St., Signal Hill	Farm Lot 64, Signal Hill	Absp.	25,000
Barnsdall Oil Co. of California, Goleta	Sec. 14-14n-29w	Absp.	65,000
Belridge Oil Co., Taft	Elk Hills, Sec. 34-30-24	Absp.	7,000
Belridge Oil Co., McKittrick	Belridge, Sec. 26-27-20	Absp.	50,000
Belridge Oil Co., McKittrick	South Belridge, Sec. 33-28-27	Absp.	*5,000
Belridge Oil Co., McKittrick	Belridge, Sec. 35-27-20	Absp.	5,000
Bolsa Chica Oil Corp., Ventura	Ventura	Absp.	*15,000
Bolsa Chica Oil Corp., Ventura	Ventura	Absp.	*6,000
Brea Canyon Oil Co.	Coyote Hills	C-A	14,000
Calumet Oil Co., Fillmore	Sec. 3-3-19, Ventura County	Comp.	900
Coline Gasoline Corp., Torrance	Lot 2, Rancho San Pedro	Absp.	10,000
Coline Gasoline Corp., Ventura	Sec. 17-3-24	Absp.	6,000
Cowan Oil & Refining Co., 6th and Spring St., Los Angeles	Rosecrans	Absp.	10,000
Del Rey Oil & Gas Co., Venice	500 ft. E and 30 ft. S from NE cor., Lot 14, Blk. 13, Del Rey Beach	Absp.	75,000
Edington Gasoline & Refining Co., Inglewood	Aerick & Eastwood Sts., Inglewood	Absp.	6,000
Export Refining Co., Torrance	Torrance Field	.....	*20,000
Field, O. C., Gasoline Corp., 111 W. 7th St., Los Angeles	Huntington Beach	Absp.	30,000
Field, O. C., Gasoline Corp., 111 W. 7th St., Los Angeles	Huntington Beach	Comp.	12,000
Field, O. C., Gasoline Corp., 111 W. 7th St., Los Angeles	Huntington Beach	Absp.	35,000
Fullerton Oil Co., R.F.D. 3, Box 72, Fullerton	Sec. 2-3-10w, Orange County	Absp.	6,000
General Petroleum Corp. of California, Higgins Bldg., Los Angeles	Santa Fe Springs	Absp.	175,000
General Petroleum Corp. of California, Higgins Bldg., Los Angeles	Ventura	Absp.	40,000
General Petroleum Corp. of California, Higgins Bldg., Los Angeles	Athens	C-A	40,000
General Petroleum Corp. of California, Higgins Bldg., Los Angeles	Brea Canyon	Absp.	10,000
Getty, Geo. F., Gasoline Co., 1060 Subway Terminal Bldg., Los Angeles	Seal Beach	Absp.	10,000
Gilmore Gasoline Plant No. 1, 2423 E. 28th St., Los Angeles	Lot 1, Tract 708, Signal Hill	Absp.	30,000
Gilmore-Dabney, 2423 E. 28th St., Los Angeles	Price and Peterson tract, Signal Hill	Absp.	*30,000
Gilmore-Dabney, 2423 E. 28th St., Los Angeles	Lots 49-56, Resub. Ass'n. Heights, Long Beach	Absp.	*30,000
Gilmore-Dabney, 2423 E. 28th St., Los Angeles	Tract 2,901, Long Beach	Absp.	30,000
Highway Gasoline Co., Ventura	Ventura Field	Absp.	20,000
Highway Gasoline Co., Ventura	Ventura Field	Absp.	*[illegible],000
Honolulu Oil Corp., Ltd., 215 Market St., San Francisco	Sec. 8-32s-24e, Kern City	C-A	30,000
Honolulu Oil Corp., Ltd., 215 Market St., San Francisco	Sec. 8-32s-24e, Kern City	C-A	30,000
Hokom Oil & Gasoline Co. (J), Lawndale	Lawndale	Absp.	5,000
Italo Petroleum Corp., Coalinga	Coalinga	Absp.	300
Lomita Gasoline Co., Box 669, Long Beach	Signal Hill	Absp.	40,000
Los Nietos Producing & Refining Co., Ltd.	Sec. 2-22s-17e	Absp.	100,000
Mohawk Petroleum Co., 20 Ave. 44, Venice	45th and Speedway, Venice	Absp.	10,000
North American Oil Consolidated, Room 915, Balfour Bldg., San Francisco	Sec. 28-31s-23e, M.D.B.&M., Kern County	Absp.	3,000
Norwalk Co., The, Santa Fe Springs	SE SW, Sec. 6, T. 3s, R. 11w, S.B.B.&M.	Absp.	50,000
Norwalk Co., The, Bin WW, Taft	Sec. 30, T. 31s, R. 24e, M.D.B.&M.	Absp.	10,000
Norwalk Co., The, Bin WW, Maricopa	SE, Sec. 36, T. 12n, R. 24e, S.B.B.&M.	Absp.	10,000
Ohio Oil Co., Los Angeles	Los Angeles County	Absp.	20,000
Pacific Western Oil Co., Drawer 36, Goleta	Goleta lease, Elwood	Absp.	20,000
Pacific Western Oil Co., Drawer Z, Ventura	Willett lease, Ventura Ave.	Absp.	20,000
Rancho La Brea Oil Co., Salt Lake	Salt Lake Field	Absp.	5,000
Reservoir Hill Gasoline Co., 855 Subway Terminal Bldg., Los Angeles	Lot 24, Alamitos, Long Beach	Absp.	12,000
Rice Ranch Oil Co., 262 S. Los Angeles St., Los Angeles	Santa Maria Field	Absp.	6,000
Rio Grande Oil Co., 855 Subway Terminal Bldg., Los Angeles	Santa Fe Springs	Absp.	10,000
Ryan & Hackett Co., Inc., 511 Associated Realty Los Angeles	Signal Hill	Absp.	*3,000
St. Helens Petroleum Co., Ltd., Box 248, Montebello	Sec. 2-2-12, Los Angeles	Absp.	750
St. Helens Petroleum Co., Ltd., Box D, Taft	Sec. 16-32-24, Kern County	Absp.	2,500
Shell Oil Co. of California, 200 Bush St., San Francisco	Graside lease, Coyote Hills	Absp.	40,000
Shell Oil Co. of California	Sec. 27, Coalinga Hills	Absp.	*4,000
Shell Oil Co. of California	Reyes, Dominguez Field	Absp.	32,000
Shell Oil Co. of California	Rindge, Inglewood Field	Absp.	10,000
Shell Oil Co. of California	Coseboom, Long Beach	Absp.	220,000
Shell Oil Co. of California	Careaga, Santa Maria Field	Absp.	4,000
Shell Oil Co. of California	Gosnell, Ventura Field	Absp.	130,000
Signal Oil & Gas Co., 811 W. 7th St., Los Angeles	Signal Hill	Absp.	30,000
Signal Oil & Gas Co., 811 W. 7th St., Los Angeles	Signal Hill	Absp.	20,000
Signal Oil & Gas Co., 811 W. 7th St., Los Angeles	Signal Hill	Absp.	10,000
Signal Oil & Gas Co., 811 W. 7th St., Los Angeles	Signal Hill	Absp.	*15,000
Signal Oil & Gas Co., 811 W. 7th St., Los Angeles	Signal Hill	Absp.	*10,000
Signal Hill Gasoline Co., Long Beach	Long Beach Field	Absp.	*35,000
Signal Hill Gasoline Co., Long Beach	Long Beach Field	Absp.	*10,000
Signal Hill Gasoline Co., Elk Hills	Elk Hills Field	Absp.	5,000
Signal Hill Gasoline Co., Seacliff	Seacliff Field	Absp.	15,000
Signal Hill Gasoline Co., Huntington Beach	Huntington Beach Field	Absp.	15,000
Signal Hill Gasoline Co.	Sunset-Midway Field	Absp.	2,000
Southern Gasoline Corp., 609 S. Grand Ave., Los Angeles	San Miguelita Field	Absp.	3,000
Southwest Refining Co., Long Beach	Long Beach	Absp.	*5,000
Standard Gasoline Co., 225 Bush St., San Francisco	Santa Fe Springs	Booster	.....
Standard Gasoline Co.	Santa Fe Springs	Absp.	40,000
Standard Gasoline Co.	Montebello	Booster	*2,500
Standard Gasoline Co.	Murphy Coyote	Absp.	20,000
Standard Gasoline Co.	Brea	Absp.	6,500
Standard Gasoline Co.	Huntington Beach	Absp.	10,000
Standard Gasoline Co.	Huntington Beach	Absp.	30,000
Standard Gasoline Co.	Huntington Beach	Absp.	20,000
Standard Gasoline Co.	Mountain View	Absp.	4,000
Standard Gasoline Co.	Seal Beach	Absp.	40,000
Standard Gasoline Co.	Seal Beach	Booster	.....
Standard Gasoline Co.	Long Beach	Absp.	30,000
Standard Gasoline Co.	Domingues	Absp.	6,750
Standard Gasoline Co.	Lost Hills	Absp.	66,000
Standard Gasoline Co.	Inglewood	Absp.	7,500
Standard Gasoline Co.	Torrance	Absp.	6,000
Standard Gasoline Co.	Ventura	Absp.	45,000
Standard Gasoline Co.	Ventura	Absp.	25,000
Standard Gasoline Co.	Ventura	Booster	.....
Standard Gasoline Co.	Taft	Absp.	20,000
Standard Gasoline Co.	Taft	Absp.	20,000
Standard Gasoline Co.	Taft	Absp.	*6,000
Standard Gasoline Co.	Taft	Absp.	6,000
Standard Gasoline Co.	Taft	Absp.	*10,000
Standard Gasoline Co.	Taft	Absp.	7,500
Standard Gasoline Co.	Taft	Absp.	15,000
Standard Gasoline Co.	Taft	Booster	.....
Standard Gasoline Co.	Wheeler Ridge	Booster	.....
Standard Gasoline Co.	Kettleman Hills	Absp.	70,000
Standard Gasoline Co.	Kettleman Hills	Absp.	75,000
Standard Gasoline Co.	Kettleman Hills	Absp.	90,000
Standard Gasoline Co.	Kettleman Hills	Absp.	70,000
State Gasoline Corp., 900 Spring Arcade Bldg., Los Angeles	Long Beach	Absp.	15,000
State Gasoline Corp.	Long Beach	Absp.	22,500
State Gasoline Corp.	Long Beach	Absp.	*20,000
Superior Oil Co., 1100 Natl. City Bank Bldg., Los Angeles	Joughin lease, Torrance Field	Absp.	2,300
Superior Oil Co.	Kettleman Hills Field	Absp.	110,000
Texas Company, The (California)	Signal Hill	Absp.	75,000
Texas Company, The (California)	Santa Fe Springs	Absp.	75,000
Texas Company, The (California)	Huntington Beach	Absp.	20,000
Texas Company, The (California)	Montebello	Absp.	2,500
Texas Company, The (California)	Sec. 2-22-17e	Comp.	10,500
Texas Company, The (California)	Fillmore-Shield	Absp.	2,500
Union Oil Co. of California, Placentia	Morse lease, Richfield Field	Absp.	10,000
Union Oil Co. of California, Brea	Stearns lease, Brea Field	Absp.	22,500
Union Oil Co. of California, Santa Fe Springs	Bell lease, Santa Fe Springs	Absp.	50,000
Union Oil Co. of California, Compton	Heilman lease, Dominguez Field	Absp.	35,000
Union Oil Co. of California, Athens	Rosecrans lease, Rosecrans Field	Absp.	27,000
Union Oil Co., of California, Santa Paula	Santa Paula refinery, Santa Paula Field	Absp.	250
Union Oil Co. of California, Orcutt	Newlove lease, Santa Maria Field	Absp.	10,000
Universal Consolidated Oil Co., 808 Richfield Bldg., Los Angeles	Lost Hills Field	Absp.	*2,000
West Coast Refining Co., 1320 Pacific Finance Bldg., Los Angeles	Richfield	Absp.	50,000
Western States Gasoline Corp., 609 S. Grand, Los Angeles	Sec. 2-22-17	Absp.	160,000
Wilshire Oil Co., Inc., 2455 E. 27th St., Vernon	Santa Fe Springs	Absp.	110,000

COLORADO

Company and plant address—	Field location—	Type of plant	Daily cap'y (gals.)
Continental Oil Co., Denver, Colo.	Twp. 9-56-R68w	Absp.	6,000
Mountain States Oil Corp.	Barela, S. W.	Absp.	6,000

ILLINOIS

Company and plant address—	Field location—	Type of plant	Daily cap'y (gals.)
American Oil Development Co., 1601 Oliver Bldg., Pittsburgh, Pa.	Crawford County	Comp.	100
American Oil Development Co., 1601 Oliver Bldg., Pittsburgh, Pa.	Crawford County	Comp.	100
Arkansas Fuel Oil Co., Robinson	Sec. 3, Prairie Twp., Crawford	Comp.	2,000
Tide Water Oil Co., 17 Battery Place, New York, N. Y.	Crawford County	Comp.	1,300
Bell Bros., Robinson	Casey	Comp.	150
Bell Bros., Robinson	Robinson	Comp.	130
Big Four Oil & Gas Co., Pittsburgh, Pa.	Bridgeport	Comp.	300
Brenneman & MacDonell, Oblong	Sec. 6-6-13, Crawford County	Comp.	1,000
Brenneman & MacDonell, Oblong	Sec. 7-7-13, Crawford County	Comp.	200
International Oil & Gas Co., Washington, Pa.	Crawford County	Comp.	2,000
Kenawee Oil & Gas Co., Robinson	Crawford	Comp.	350
Kenawee Oil & Gas Co., Robinson	Lawrence County	Comp.	135
Mahutska Oil Co., Robinson	Sec. 17-7-13	Comp.	250
Mahutska Oil Co., Robinson	Sec. 28-6-13	Comp.	250
Mahutska Oil Co., Robinson	Sec. 10-6-13	Comp.	1,000
Mahutska Oil Co., Robinson	Sec. 30-7-13	Comp.	500
Mallory & Crawford, Bradford, Pa.	Oblong, ½ mi. E	Comp.	110
Nolan & Lamberton, Box 1328, Tulsa, Okla.	Sec. 12-7-14, Crawford County	Comp.	100
Ohio Oil Co., Casey	Clark County	Comp.	124
Ohio Oil Co., Casey	Clark County	Comp.	241
Ohio Oil Co., Casey	Cumberland County	Comp.	1,150
Ohio Oil Co., Oblong	Crawford County	Comp.	405
Ohio Oil Co., Oblong	Crawford County	Comp.	242
Ohio Oil Co., Oblong	Crawford County	Comp.	310
Ohio Oil Co., Robinson	Crawford County	Comp.	247
Ohio Oil Co., Hardinville	Crawford County	Comp.	756
Ohio Oil Co., Hardinville	Crawford County	Comp.	100
Ohio Oil Co., Oblong	Crawford County	Comp.	242
Ohio Oil Co., Stoy	Crawford County	Comp.	310
Ohio Oil Co., Stoy	Crawford County	Comp.	833
Ohio Oil Co., Oblong	Crawford County	Comp.	200
Ohio Oil Co., Oblong	Crawford County	Comp.	1,130
Ohio Oil Co., Bridgeport	Lawrence County	Comp.	570
Ohio Oil Co., Bridgeport	Lawrence County	Comp.	*570
Ohio Oil Co., Bridgeport	Lawrence County	Comp.	1,800
Ohio Oil Co., Bridgeport	Lawrence County	Comp.	*1,150
Ohio Oil Co., Bridgeport	Lawrence County	Comp.	950
Ohio Oil Co., Bridgeport	Lawrence County	Comp.	1,000
Ohio Oil Co., Lawrence	Lawrence County	Comp.	500
Ohio Oil Co., Bridgeport	Lawrence County	Comp.	1,050
Ohio Oil Co., Bridgeport	Lawrence County	Comp.	1,050
Ohio Oil Co., Bridgeport	Lawrence County	Comp.	*250
Ohio Oil Co., Bridgeport	Lawrence County	Comp.	250
Ohio Oil Co., Bridgeport	Lawrence County	Comp.	1,400
Ohio Oil Co., Bridgeport	Lawrence County	Comp.	1,500
Ohio Oil Co., Bridgeport	Lawrence County	Comp.	1,500
Ohio Oil Co., Bridgeport	Lawrence County	Comp.	*250

(Continued on Next Page)

Mechanical Details

. . . are Only PART of the Story

Above: Synchronization of the engine in this Model A-8 International Truck with the engine on the bed of the truck is the distinguishing feature of this new portable drilling rig owned by Helmerich and Payne, Inc., Tulsa drilling contractors. The power of both engines can be utilized for drilling operations. This outfit is practical for depths of 5,000 feet, using four-inch casing or pipe.

It is shown here drilling a well at Ellenwood, Kans. It was drilling within four hours after pulling into location. Compare this speed with the four or five days necessary to set up a steam rig. Besides the saving in time, it makes important savings in fuel and water.

INTERNATIONAL

MANY claims are made, by many makers, as to mechanical features in trucks, but how much do these claims help *you* in getting at *fundamental* truck values? We have all the engineering data for any truck buyer who is interested in technical information. *But there are better ways to judge a truck's value to you.*

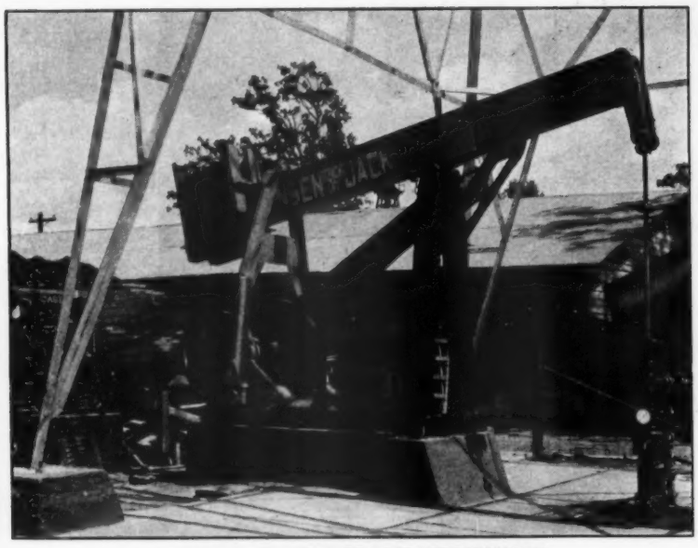
International Truck performance is the best evidence you can get of sound truck investment. It is obvious that the results of International engineering experience gained in 30 years of truck building would be embodied in the perfected Internationals of today. Moreover—it is plain good sense for a truck buyer to ally himself with the largest Company-owned truck-service organization in the world. *These are fundamentals you can bank on. They don't change, except for the better.*

International Trucks range from half-ton to powerful six wheelers. Ask for a demonstration.

INTERNATIONAL HARVESTER COMPANY
606 So. Michigan Ave. of America (*Incorporated*) Chicago, Illinois

INTERNATIONAL TRUCKS

14 MONTHS of Steady Pumping without a shut-down for repairs



A TYPICAL EXAMPLE OF CASE PERFORMANCE

A Case Model "CE" engine installed on one of the principal leases in California, ran continuously for 14 months without a shut-down for repairs. It replaced an electric motor pumping seven wells on a jackshaft. The cost for fuel (natural gas) averaged 83 cents per 24 hour day.

Here are the reasons why Case Engines keep going longer

● In Case Models "CE" and "LE," four-cylinder construction provides smooth, uniform power at all operating speeds and at half the cost of single cylinder engines of equal horsepower. They save fuel and oil. Every part is easily accessible for inspection. All important parts pressure lubricated. Clutch operates in oil bath. Heavy 3-bearing crankshaft with oversize bearings. Dependable cooling system. Cylinders and radiator tubes easily removable for scale removal. Fool-proof, simplified controls and adjustments. Engine 100% dust-proof.

For a reliable, durable, economical power unit, a Case engine is unbeatable. Don't buy a new engine or replace an old one without getting all the facts about the real savings Case can make for you.

J. I. CASE CO., *Racine, Wis.*

Factory branches in important distributing centers

CASE

Company and plant address—	Field location—	Type of plant	Daily cap'y (gals.)
Ohio Oil Co., Bridgeport	Lawrence County	Comp.	1,200
Ohio Oil Co., Bridgeport	Lawrence County	Comp.	375
Ohio Oil Co., Bridgeport	Lawrence County	Comp.	1,140
Ohio Oil Co., Bridgeport	Lawrence County	Comp.	770
Ohio Oil Co., Bridgeport	Lawrence County	Comp.	450
Snowden & McSweeney Co., Bridgeport	E half SE, Sec. 17-3-12w	Topping	1,000
Spiane, W. W., Oil City, Pa.	Robinson	Comp.	300
Stranahan & Cheuvront, 405 W. Main St., Oblong	Sec. 11-7-13	Comp.	15
Stranahan & Cheuvront, 405 W. Main St., Oblong	Sec. 22-6-13	Comp.	25
Stranahan & Cheuvront, 405 W. Main St., Oblong	Sec. 25-7-13	Comp.	15
Vacuum Gasoline Co., Lawrenceville	Lawrence County	Comp.	5,000
Vincennes Oil & Gas Co., Vincennes, Ind.	Lawrence County	Comp.	2,000
KANSAS			
Altitude Petroleum Co., Kennedy Bldg., Tulsa, Okla.	Chanute	Comp.	2,000
Barnsdall Oil Co., Route 2, Box 173, Oxford†	W half NW, Sec. 20-33-3	Absp.	6,000
Empire Oil & Refining Co., Caney	SW, Sec. 13-35-13	Absp.	*10,000
Empire Oil & Refining Co., Arkansas City	SE, Sec. 13-34-3	Absp.	*15,000
Empire Oil & Refining Co., Teterville	SW, Sec. 16-23-9	Absp.	10,000
Empire Oil & Refining Co., Madison	NW, Sec. 8-23-11	Absp.	9,000
Empire Oil & Refining Co., Thrall	SE half, Sec. 29-23-10	Comp.	7,500
Empire Oil & Refining Co., Wellington	SW, Sec. 17-32-1	Absp.	*12,000
Empire Oil & Refining Co., Madison	NE, Sec. 14-22-11	Comp.	4,000
Empire Oil & Refining Co., Wichita	NW, Sec. 17-28-1	Absp.	40,000
Peoples Ice & Fuel Co., McPherson	K. P. L. trans. line	Absp.	20,000
Peoples Ice & Fuel Co., Medicine Lodge	K. P. L. trans. line	Absp.	6,000
Kansas Gasoline Co., Box 1978, Tulsa, Okla.	Sec. 24-32s-4e, Cowley County	Absp.	5,000
McPherson Oil & Gas Development Co., United Life Bldg., Salina	SW, Sec. 29-18-2w	Absp.	10,000
Pep Gasoline Co.	Sedan, 2 mi. E	Comp.	1,800
Shell Petroleum Corp., Oxford	SE, Sec. 25-31s-2e	Absp.	5,000
Sinclair Prairie Oil Co., Box E, Kenbro	SW, Sec. 20-22-10e	Comp.	7,000
Skelly Oil Co., Box 236, Cunningham	Sec. 30-27s-10e, Kingman County	Absp.	3,500
Union Gas System, Inc., Independence	S of Caney	Absp.	*2,000
Texas Co., The (Delaware), O'Brien Switch	Sec. 31-30n-6e	Absp.	12,400
Texas Co., The (Delaware), Gordon	Sec. 28-26n-5e	Absp.	6,000
Union Gasoline Co., Caney	Sec. 29-29-13, Washington County	Absp.	5,000
Washington Development Co., Wellington	Sec. 24-32s-1w	Absp.	*12,000

†Owned jointly with Continental Oil Co.

KENTUCKY			
Coast Oil Co., Monticello	Monticello	Comp.	*500
Heck, W. B., & Co., Box 164, Owensboro, Ky.	Monticello	Comp.	*300
Kentucky Pipe Line Co., 311 W. Chestnut St., Louisville	Clark County	Char.	2,600
Louisville Gas & Electric Co.	Winchester	Char.	2,500
Virginian Gasoline & Oil Co., Kermit, W. Va.	Martin County	Absp.	10,000
Virginian Gasoline & Oil Co., Catlettsburg	Boyd County	Absp.	24,000
LOUISIANA			
Arkansas Fuel Oil Co., Homer	Sec. 24-21n-8w, Claiborne	Comp.	5,000
Arkansas-Louisiana Gas Co., Shreveport	Sec. 26-23n-16w	Absp.	20,000
Arkansas Natural Gas Corp., Shreveport	Sec. 31-17s-15w	C-A	5,000
Century Carbon Co., Monroe	Ouachita Parish	Absp.	2,000
Century Carbon Co., Monroe	Richland Parish	Absp.	2,200
Columbian Gasoline Corp., R.F.D., Rayville	Sec. 10-16n-6e, Richland	Absp.	6,000
Columbian Gasoline Corp., Swartz	Sec. 5-18n-5e, Ouachita	Absp.	2,000
Columbian Gasoline Corp., Fairbanks	Sec. 2-19n-4e, Ouachita	Absp.	2,000
Columbian Gasoline Corp., R.F.D. 2, Bastrop	Sec. 19-29n-5e, Morehouse	Absp.	1,000
DeSota Gasoline Co.	Mansfield	Comp.	980
Gulf Refining Co. of Louisiana, Mooringsport	Caddo	Comp.	8,000
Gulf Refining Co. of Louisiana, Mooringsport	Homer	Absp.	10,000
Herkness J. Smylie, R. F. D. 3 Bastrop	Morehouse Parish	Absp.	*1,000
Huber, J. M., Corp., Swartz	Sec. 5-18n-5e	Absp.	2,000
Louisiana Gas & Fuel Co.	Alto	Absp.	36,000
Louisiana Gas & Fuel Co.	Uscarco	Absp.	4,000
Magnolia Petroleum Co., Harmon	Sec. 12-12-11, Red River	Absp.	1,500
Magnolia Petroleum Co. Gilliam	Sec. 24-21n-15w, Caddo	Absp.	*1,300
Monroe-Louisiana Carbon Co., Swartz	Secs. 28 and 33-19n-5e Ouachita Parish	Char.	*2,000
Ohio Oil Co., Haynesville	Claiborne Parish	Absp.	4,000
Ohio Oil Co., Treat	Webster Parish	Absp.	2,000
Phillips Petroleum Co., Homer	W half SW, Sec. 19-21-7	Comp.	10,500
Reserve Natural Gas Co. of Louisiana, Shreveport	Sec. 10-17n-14w, Caddo	Absp.	*10,000
Arkansas-Louisiana Gas Co., Shreveport	Shreveport	Absp.	*5,000
Southwestern Gas & Electric Co., Oil City	Oil City	Comp.	450
Standard Oil Co. of Louisiana, Trees	Caddo Field, near Trees	C-A	4,080
Standard Oil Co. of Louisiana, Homer	Claiborne Field, near Homer	C-A	3,900
Stanolind Oil & Gas Co., Gilliam	Gilliam	Absp.	6,000
Texas Co., The (Delaware), Oil City	Sec. 3-20n-16w, Caddo	Comp.	4,000
Texas Co., The (Delaware), Oil City	Sec. 23-21n-15w, Caddo	Absp.	*18,800
Texas Co., The (Delaware), Mooringsport	Sec. 19-20n-15w, Caddo	Comp.	*600
Texas Co., The (Delaware), Naborton	Sec. 34-13n-12w, De Soto	Comp.	*4,000
Union Gas Products, Inc., 710 Ouachita Bank Bldg., Monroe	Near Swartz	C-A	6,000
United Carbon Co., Monroe	Sec. 10-16-6	Absp.	9,000
United Carbon Co., Monroe	Sec. 5-18-5	Absp.	4,000
United Gas Public Service Co., Alto	Sec. 16-16n-6e, Richland	Absp.	50,000
United Gas Public Service Co., Bastrop	Sec. 31-20n-5e, Morehouse	Absp.	*1,300
United Gas Public Service Co., Rodessa	Sec. 14-21n-15w, Caddo	Absp.	30,000
United Gas Public Service Co., Cotton Valley	Sec. 17-21n-10w, Webster	Absp.	50,000
United Gas Public Service Co., Swartz	Sec. 32-19n-5e, Ouachita	Absp.	*2,500
United Gas Public Service Co., Sugar Creek†	Sec. 6-19n-6e, Claiborne	Absp.	30,000

†Owned jointly with Sugar Creek Syndicate.

MICHIGAN			
Grimes, Otha H., Box 322, Tulsa, Okla.	Mt. Pleasant	Comp.	4,000
MONTANA			
Montana Power Gas Co., Cut Bank	Glacier County	Absp.	9,000
NEW MEXICO			
Phillips Petroleum Co., Hobbs	N half NW, Sec. 4-19-38	Absp.	40,000
Shell Petroleum Corp., Hobbs†	SW, Sec. 19-18s-38e	Absp.	30,000

†Owned jointly with Continental Oil Co.

NEW YORK			
Empire Gas & Fuel Co., Andover	Lot 55, Andover Twp.	Absp.	*400
Wirt Gasoline Co., Bradford, Pa.	Richburg	Comp.	*500
OHIO			
American Oil Development Co., Pittsburgh, Pa.	Monroe County	Comp.	500
American Oil Development Co., Pittsburgh, Pa.	Monroe County	Comp.	200
Hope Construction & Refining Co.	New Matamoras	Absp.	1,200
Jefferson Gasoline Co., Ryland	Sec. 27, Wells Twp.	Comp.	250
Muskingum Oil Co., Sistersville, W. Va.	Perry Twp., Monroe County	Comp.	*1,000
Norris, Mrs. Jennie, Parkersburg, W. Va.	Sec. 11, Newport Twp., Washington County	Comp.	100
Ohio Producing & Refining Co. (The)	Sec. 22, Chippewa Twp., Wayne County	Char.	6,000

(Continued on Next Page)

Company and plant address—	Field location—	Type of plant	Daily cap'y (gals.)
Preston Oil Co., Homer	Burlington Twp., Licking County	Absp.	15,000
Preston Oil Co., Pavonia	Weller Twp., Richland County	Absp.	10,000
Preston Oil Co., Elk	Stock Twp., Noble County	Absp.	2,000
Preston Oil Co., Sugar Grove	Berne Twp., Fairfield County	Absp.	9,000
Preston Oil Co., Pomeroy	Sutton Twp., Meigs County	Absp.	*5,000
Preston Oil Co., Zanesville	Wayne Twp., Muskingum County	Absp.	*2,000
Preston Oil Co., Medina	York Twp., Medina County	Absp.	*10,000
Reno Oil Co., Sistersville, W. Va.	Monroe County	Comp.	55
River Gas Co.	New Matamoras	Absp.	125
Pittsburgh Oil & Gas Co., Schley	Archers Fork	Comp.	200
Pittsburgh Oil & Gas Co., Southern Valley	Sycamore Valley	Comp.	200
Tuel & Thoenen	Fly, 2 mi. SW	Comp.	200
Tyler Oil Co., Sistersville, W. Va.	Monroe County	Comp.	41
OKLAHOMA			
Akin Gasoline Co., Box 1402, Tulsa	Dewey	Comp.	1,000
Akin Gasoline Co., Box 1402, Tulsa	Bixby	Comp.	1,000
Altitude Petroleum Corp., Kennedy Bldg., Tulsa	Oilton	Comp.	*5,000
Amerada Petroleum Corp., Box 596, Ardmore	W half SE, Sec. 20-5s-1e	Comp.	*5,000
American Petroleum Corp., Box 686, Healdton	SE, Sec. 31-2s-2w	Absp.	12,000
Amerada Petroleum Corp., Box 92, Earlsboro	Sec. 16-9n-5e	Absp.	*15,000
Amerada Petroleum Corp., Maud	N half W half NE, Sec. 7-8n-5e	Absp.	35,000
Amerada Petroleum Corp., Box 92, Earlsboro	SW NW, Sec. 17-9n-5e	Comp.	*15,000
Amerada Petroleum Corp., R.F.D. 8, Oklahoma City	SE, Sec. 30-11n-2w	Absp.	15,000
Barco Gasoline Co., Wirt	Healdton Field	Comp.	3,000
Barnsdall Oil Co., Box 224, Avant	SE, Sec. 18-23-12	Absp.	2,000
Barnsdall Oil Co., Box 518, Earlsboro	NE NE, Sec. 15-9-5	Absp.	8,500
Barnsdall Oil Co., Box 2039, Tulsa	SE, Sec. 5-20-12	Absp.	500
Barnsdall Oil Co., Route 1, Barnsdall	NW, Sec. 29-25-11	Absp.	1,600
Barnsdall Oil Co., Box 228, Osage	SW, Sec. 20-21-9	Absp.	1,400
Barnsdall Oil Co., Box 856, Beggs	NE, Sec. 6-14-12	Absp.	1,900
Bartlett Gasoline Co., 313 Wright Bldg., Tulsa	Sec. 23-14-19	Absp.	11,000
Carter Oil Co., Box 801, Tulsa	Sec. 23-4s-2w	Absp.	6,000
Carter Oil Co., Box 801, Tulsa	Sec. 9-26n-6e	Absp.	12,000
Carter Oil Co., Box 801, Tulsa	Sec. 3-10n-8e	Absp.	16,000
Carter Oil Co., Box 801, Tulsa	Sec. 15-9n-6e	Absp.	50,000
Carter Oil Co., Box 801, Tulsa	Sec. 14-7n-6e	Absp.	15,000
Carter Oil Co., Box 801, Tulsa	Sec. 10-25n-6e	Comp.	4,000
Coline Gasoline Corp., Oklahoma City	Sec. 24-11n-3w, Oklahoma City	Absp.	25,000
Comar Gasoline Co., Tonkawa	NE, Sec. 2-24n-1w	Absp.	30,000
Comar Oil Co., Blackwell	SW, Sec. 21-29n-1w	Absp.	10,000
Comar Oil Co., Blackwell	NW, Sec. 5-28n-1w	Absp.	10,000
Continental Oil Co., Ponca City	Twp. 22-S13-R4w	Absp.	2,500
Cosden, J. S., Inc., Fort Worth, Tex.	Sec. 31-19n-4w	Absp.	*50,000
Cosden, J. S., Inc., Fort Worth, Tex.	Sec. 19-11n-11e	Comp.	1,000
Cromwell-Franklin Oil Co., Oklahoma City	SE SW SE, Sec. 12-11n-3w	Absp.	30,000
Crosbie, Inc. (J. E.), Lovell	NW, Sec. 20-19-4	Comp.	20,000
Crosbie, Inc. (J. E.), Okemah	Sec. 29-12-10	Absp.	16,000
Crosbie, Inc. (J. E.), St. Louis	S½ S½ NE, Sec. 15-7-4	Absp.	20,000
Crosbie, Inc. (J. E.), Holdenville	NW NW, Sec. 15-7-8	Absp.	20,000
Crosbie, Porter & Martin, Box 625, Okemah	SW SE, Sec. 29-12-10	Absp.	16,000
Deep Rock Oil Corp., Shamrock	Sec. 4-16-7	Absp.	5,000
Deep Rock Oil Corp., Kellyville	Sec. 17-17-11	Comp.	4,000
Deep Rock Oil Corp., Mehan	Sec. 23-18-3	Absp.	8,000
Deep Rock Oil Corp., Cushing	Sec. 9-18-10	Absp.	4,000
DeSoto Gasoline Co., Muskogee	Sec. 5-14-18	Comp.	366
Devonian Oil Co., Tulsa, Okla.	NE, Sec. 32-7n-6w	Absp.	*10,000
Devonian Oil Co., Tulsa, Okla.	SE, Sec. 22-17n-10e	Absp.	20,000
Eagle-Picher Mining & Smelting Co., Henryetta, Okla.	Sec. 6-11n-13e	Absp.	3,000
Eason Oil Co., Enid	Enid	Absp.	10,000
Eason Oil Co., Enid	NE, 24-22-4w	Comp.	6,000
Eason Oil Co., Enid	SW, 34-17-4w	C-A	15,000
Empire Oil & Refining Co., Tallant	SE, Sec. 35-25-10	Absp.	20,000
Empire Oil & Refining Co., Seminole	SE, Sec. 24-9-6	Absp.	25,000
Empire Oil & Refining Co., Seminole	NE, Sec. 34-9-6	Absp.	*20,000
Empire Oil & Refining Co., Seminole	SW, Sec. 14-8-6	C-A	20,000
Empire Oil & Refining Co., Seminole	NE, Sec. 11-8-5	Comp.	25,000
Empire Oil & Refining Co., Konawa	NW, Sec. 9-6-6	Absp.	20,000
Empire Oil & Refining Co., Konawa	NE, Sec. 22-6-3	Absp.	*10,000
Empire Oil & Refining Co., Asher	NE, Sec. 29-6-4	Absp.	30,000
Enfisco Oil Corp., Box 2021, Tulsa	NE, Sec. 17-17-13, Bixby	Comp.	1,500
Foster & Norwood Oil Co., Bartlesville	Barnsdall	Absp.	4,000
Franklin, Wirt, Petroleum Corp., Cromwell-Franklin and I.T.I.O. Co., Oklahoma City	NW NW, Sec. 12-11n-3w	Absp.	25,000
Grimes, Otha H., Box 322, Tulsa	Sec. 35-20-9	Comp.	1,000
Grimes Gasoline Co., Tulsa	Okemah	Absp.	5,000
Grimes Gasoline Co., Tulsa	Keystone	Absp.	2,000
Grimes, O. H., Tulsa	Weleetka	Comp.	2,000
Grimes, C. W. and O. H., Tulsa	Weleetka	Absp.	6,000
Gypsy Oil Co., Box J, Kiefer	N half SW, Sec. 16-17-12	Comp.	24,000
Gypsy Oil Co., Box 338, Cleveland	SE, Sec. 1-21-7	Comp.	1,100
Gypsy Oil Co., Route 2, Kaw City	NW, Sec. 24-27-5e	Absp.	14,000
Gypsy Oil Co., Box 128, Drumright	NE, Sec. 3-14-8	Absp.	3,500
Gypsy Oil Co., Box 967, Seminole	SE SW, Sec. 14-7n-6e	Absp.	9,700
Gypsy Oil Co., Box 967, Seminole	SE NW, Sec. 7-8-6e	Absp.	18,900
Harland Oil Co., Wolco, Okla.	SW, Sec. 20-25-11	Absp.	1,500
Harland Oil Co., Wolco, Okla.	NE, Sec. 25-24-11	Absp.	1,500
Indian Territory Illuminating Oil Co., Oklahoma City	SE, Sec. 24-11-3	Absp.	25,000
Indian Territory Illuminating Oil Co., Oklahoma City	SW, Sec. 19-11-2	Absp.	25,000
Indian Territory Illuminating Oil Co., Oklahoma City	SE, Sec. 13-11-3	Absp.	25,000
Indian Territory Illuminating Oil Co., Oklahoma City	NW, Sec. 31-11-2	Absp.	25,000
Indian Territory Illuminating Oil Co., Oklahoma City	SE, Sec. 11-11-2	Absp.	25,000
Indian Territory Illuminating Oil Co., Oklahoma City	Sec. 12-11-3	Absp.	25,000
Lebow (C. H.), Drumright	Sec. 8-17n-7e	Absp.	1,000
Magnolia Petroleum Co., Yale	NE SW, Sec. 6-19n-6e	Absp.	4,500
Magnolia Petroleum Co., Oilton	NE, Sec. 7-18n-7e	Absp.	9,500
Magnolia Petroleum Co., Shamrock	SW, Sec. 3-16n-7e	Absp.	8,250
Magnolia Petroleum Co., Davenport	SW, Sec. 34-15n-5e	Absp.	3,750
Magnolia Petroleum Co., Earlsboro	NE NW SE, Sec. 10-9n-5e	Absp.	*6,000
Magnolia Petroleum Co., St. Louis	NW SW SE, Sec. 15-7n-4e	Absp.	13,000
Magnolia Petroleum Co., Wewoka	W 7.65 ac., Lot 4, Sec. 32-8n-8e	Absp.	5,750
Magnolia Petroleum Co., Duncan	NW NW, Sec. 19-1s-8w	Comp.	*600
Magnolia Petroleum Co., Graham	SE SE SE, Sec. 23-2s-3w	Absp.	5,000
Magnolia Petroleum Co., Healdton	SW NW NE, Sec. 15-4s-3w	Absp.	*2,500
Masoneal Gasoline Co., Box 516, Tulsa	Sec. 23-21n-8e	Comp.	1,500
McBride, Inc., W. C., St. Louis, Mo.	Osage County	Comp.	1,500
Midco Oil Corp., Tulsa	Billings, 8 mi. S	Comp.	*20,000
Midco Oil Corp., Tulsa	Dewey	Comp.	*10,000
Midco Oil Corp., Tulsa	Drumright	Comp.	5,000
Midco Oil Corp., Tulsa	Oilton	Comp.	10,000
Mid-Continent Petroleum Corp., Tulsa	SE SE, Sec. 22-17-7	Absp.	20,000
Mid-Continent Petroleum Corp., Tulsa	E half NW, Sec. 5-16-15	Comp.	3,000
Mid-Continent Petroleum Corp., Tulsa	SW, Sec. 12-13-13	Absp.	2,000
Mid-Continent Petroleum Corp., Tulsa	NE SW, Sec. 15-10-8	Absp.	50,000
Mid-Continent Petroleum Corp., Tulsa	S half SE, Sec. 28-17-14	Comp.	2,000
Mid-Continent Petroleum Corp., Tulsa	W half NW, Sec. 17-9-8	Absp.	5,000
Mid-Continent Petroleum Corp., Tulsa	NW, Sec. 8-15-6	Absp.	2,000
Mid-Continent Petroleum Corp., Tulsa	NW, Sec. 28-20-12	Absp.	2,000

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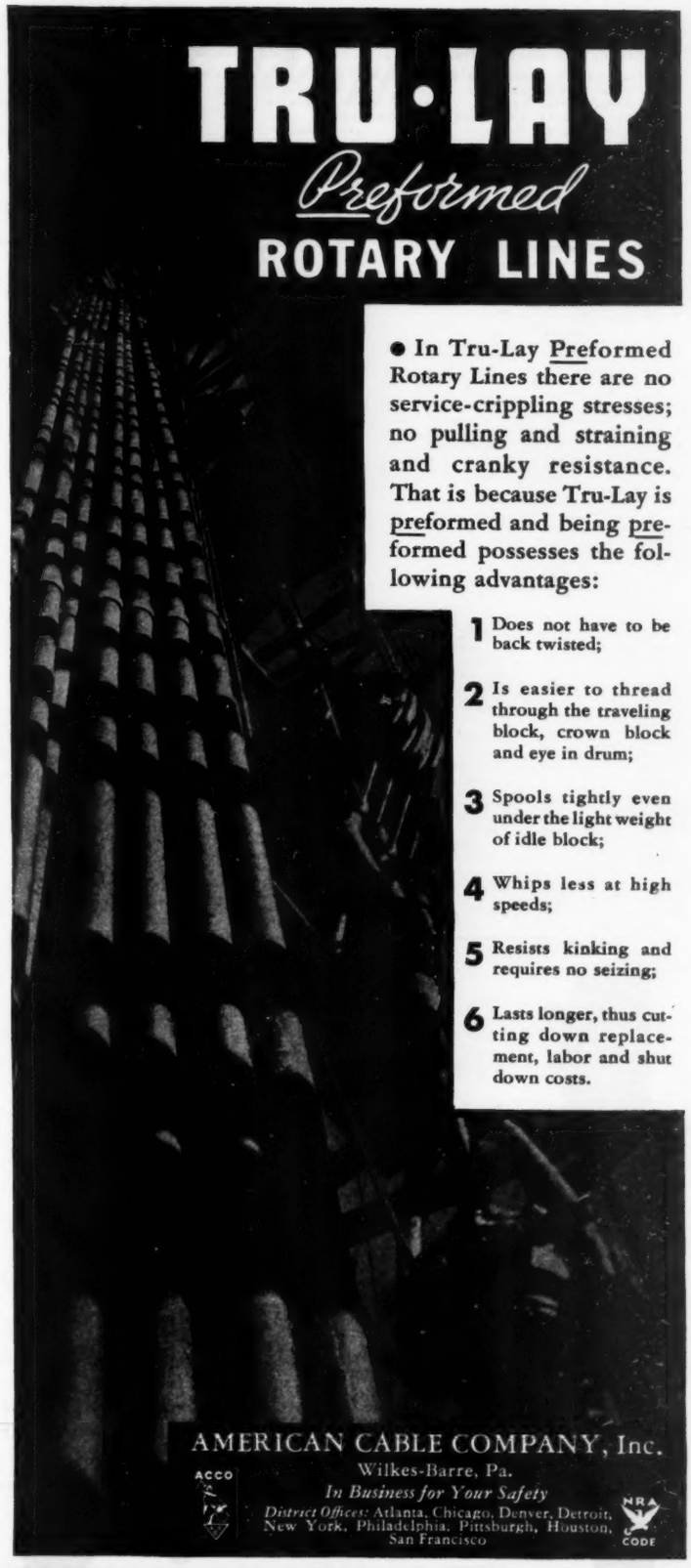
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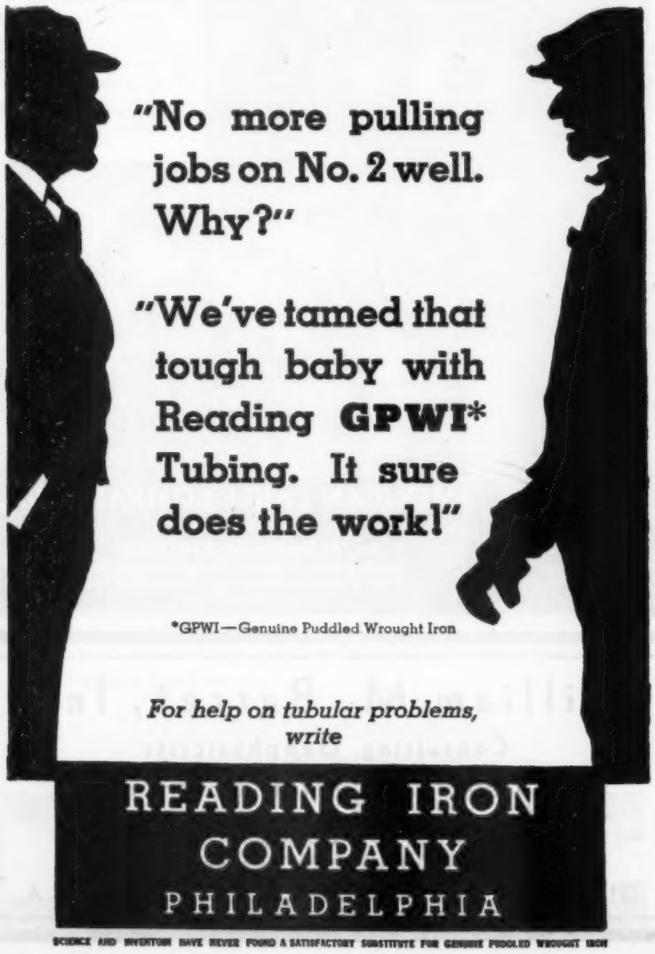
Company and plant address—	Field location—	Type of plant	Daily cap'y (gals.)
Marathon Oil Co., Thompson Bldg., Tulsa	Sec. 27-16-9, Creek County	C-A	5,000
Moon Gasoline Co., Tulsa	Sec. 32-15-18	Comp.	500
Moon Gasoline Co., Tulsa	Sec. 4-16-13	Comp.	1,500
National Products Co., 1510 Commonwealth Bldg., Pittsburgh, Pa.	Oilton	Absp.	1,200
National Products Co., 1510 Commonwealth Bldg., Pittsburgh, Pa.	Slick	Absp.	1,200
National Products Co., 1510 Commonwealth Bldg., Pittsburgh, Pa.	Slick	Absp.	1,600
National Products Co., 1510 Commonwealth Bldg., Pittsburgh, Pa.	Slick	Absp.	1,400
Neal Gasoline Co., Osage	Sec. 13-21-8	Absp.	4,000
Neal Gasoline Co., Copan	Sec. 32-28-13	Absp.	*1,200
Oil State Gasoline Co.	NE, Sec. 7-18n-13e	Comp.	2,500
Oil State Gasoline Co., Jenks	NE, Sec. 13-19n-5e	Comp.	2,000
Oklahoma Gasoline Plants, Inc., Drumright	Sec. 18-18-7e	Absp.	10,000
Oklahoma Utilities Co., Bristow	Sec. 20-16-9, Creek County	Absp.	5,000
Orfic Gasoline Production Co., Tulsa	Cleveland	Comp.	2,000
Peppers Gasoline Co., Enid	Enid	Absp.	5,000
Phillips Petroleum Co., Bartlesville	NW SW, Sec. 32-11-2w	Absp.	50,000
Phillips Petroleum Co., Bartlesville	NW SW, Sec. 33-11-8	Absp.	20,000
Phillips Petroleum Co., Bartlesville	NE NE, Sec. 26-27-5	Absp.	45,000
Phillips Petroleum Co., Bartlesville	SE NW, Sec. 24-11-11	Absp.	17,000
Phillips Petroleum Co., Bartlesville	NW NW, Sec. 23-7-6	Absp.	15,000
Phillips Petroleum Co., Bartlesville	NW NW Sec. 12-12-2	Absp.	10,000
Phillips Petroleum Co., Bartlesville	S half, Sec. 1-11-3	Absp.	60,000
Phillips Petroleum Co., Bartlesville	SW NW, Sec. 12-25-11	Absp.	5,000
Phillips Petroleum Co., Bartlesville	SE SE, Sec. 6-24-10	Absp.	14,000
Phillips Petroleum Co., Bartlesville	SW Sec. 16-24-7	Comp.	30,000
Phillips Petroleum Co., Bartlesville	SW NW, Sec. 33-8-8	Absp.	50,000
Phillips Petroleum Co., Bartlesville	N half NW, Sec. 3-9-9	Absp.	30,000
Powers, M. F., Depew	Sec. 8-15-8	Absp.	3,500
Powers & Quinlan, Box 696, Beggs	SW NE, Sec. 11-14-12	Comp.	1,000
Powers & Quinlan, Box 696, Beggs	SW SE, Sec. 5-14-12	Comp.	500
Powers & Quinlan, Box 696, Beggs	Sec. 22-13-14	Comp.	500
Pure Oil Co., Drumright	Sec. 32-18n-7e	Comp.	3,100
Pure Oil Co., Oilton	Sec. 32-19n-7e	Comp.	1,700
Pure Oil Co., Healdton	Sec. 11-4s-3w	Comp.	1,000
Pure Oil Co., Depew	Sec. 5-15n-8e	Comp.	1,400
Pure Oil Co., Seminole	Sec. 26-9n-6e	Comp.	5,000
Reserve Petroleum Co., Box 338, Barnsdall	Barnsdall	Absp.	2,500
Sand Springs Home, Gasoline Department, Sand Springs	Sec. 4-18-7	Comp.	*3,000
Shell Petroleum Corp., Three Sands†	NW, Sec. 2-24n-1w	Absp.	3,000
Shell Petroleum Corp., Braman	SW, Sec. 21-29n-1w	Absp.	8,000
Shell Petroleum Corp., Braman†	NW, Sec. 5-28n-1w	Absp.	20,000
Shell Petroleum Corp., Drumright	NE, Sec. 8-17n-7e	Absp.	8,000
Shell Petroleum Corp., Maud	SE, Sec. 7-8n-5e†	Absp.	7,000
Shell Petroleum Corp., Marshall	SE, Sec. 19-19n-4w	Absp.	12,000
Signal Oil & Gas Co., Inc.	Bristow	Absp.	5,000
Silurian Oil Co., Missouri Pacific Bldg., St. Louis	Avant	Comp.	1,200
Sinclair Prairie Oil Co., Box 68, Cleveland	S half SW, Sec. 35-21-8	Comp.	3,000
Sinclair Prairie Oil Co., R.F.D. 1, Drumright	SW SW, Sec. 28-18-7	Comp.	25,000
Sinclair Prairie Oil Co., Box 578, Shamrock	SW SE, Sec. 28-17-7	Comp.	15,000
Sinclair Prairie Oil Co., Box 368, Covington	W half SW, Sec. 19-22-3	Absp.	20,000
Sinclair Prairie Oil Co., Box 6, Shidler	SW SE, Sec. 29-27-6	Absp.	30,000
Sinclair Prairie Oil Co., Box 865, Seminole	NW NW, Sec. 35-9-6	Absp.	70,000
Sinclair Prairie Oil Co., Box 737, Seminole	SW NE, Sec. 10-8-6	Absp.	50,000
Sinclair Prairie Oil Co. St. Louis	SW, Sec. 24-7-4	Comp.	30,000
Sinclair Prairie Oil Co., Box 4188, Capitol Hill, Oklahoma City	SE NW, Sec. 30-11-2	Absp.	50,000
Sinclair Prairie Oil Co., Box 297, Sasakwa	W half, Sec. 7-6-8	Comp.	20,000
Skelly Oil Co., Box 536, Seminole	SW, Sec. 19-7n-6e	Absp.	11,000
Skelly Oil Co., Box 157, Lyman	NW, Sec. 11-27n-5e	Absp.	15,000
Skelly Oil Co., Jennings	NW SW NW, Sec. 15-20n-6e	Absp.	2,750
Skelly Oil Co., Box 168, Slick	NW cor. Sec. 15-15n-10e	Absp.	3,000
Skelly Oil Co., Box 413, Wynona	N half SW, Sec. 24-24n-9e, Osage County	Absp.	4,000
Skelly Oil Co., Box 487, Fairfax	Sec. 10-25n-6e, Osage County	Comp.	10,000
Southland Gasoline Co., Tulsa	Sec. 33-19-7, Creek County	Absp.	2,000
Stanolind Oil & Gas Co., Philcade Bldg., Tulsa	Tonkawa	Absp.	10,000
Sterling Oil & Gas Co., Tulsa	SE, Sec. 1-21-11	Absp.	250
Superior Oil Corp., 315 Exchange Natl. Bank Bldg., Tulsa	NE, Sec. 2-9n-5e	Comp.	*10,000
Superior Oil Corp., 315 Exchange Natl. Bank Bldg., Tulsa	NW, Sec. 8-9-5	Comp.	*10,000
Test Oil Co., Bartlesville	Sec. 30-27-14	Comp.	*500
Texas Co., The (Delaware), Kiefer	Sec. 8-17n-12e	Comp.	13,900
Texas Co., The (Delaware), Davenport	Sec. 2-14n-5e	Absp.	12,200
Texas Co., The (Delaware), McInnis	Sec. 30-25n-8e	Absp.	5,000
Texas Co., The (Delaware), Maud	Sec. 7-8n-5e†	Absp.	25,000
Tide Water Oil Co. (Okla.), Philcade Bldg., Tulsa	Sec. 8-17n-7e	Absp.	15,000
United Carbon Co., Charleston, W. Va.	Sayre	Absp.	7,000
Victor Gasoline Co., Stroud	Sec. 5-15-6	Absp.	5,000
Victor Gasoline Co., Bristow	Sec. 27-16-9	Absp.	5,000
Warner-Caldwell Oil Co., Titusville, Pa.	Sec. 36-26n-14e	Comp.	200
Warner-Caldwell Oil Co., Titusville, Pa.	Sec. 1-25n-16e	Comp.	1,000
Warner-Caldwell Oil Co., Titusville, Pa.	Sec. 17-26n-16e	Comp.	400
Warner-Caldwell Oil Co., Titusville, Pa.	Sec. 17-18n-26e	Comp.	3,000
Warren Petroleum Co., Box 198, Tulsa	Sec. 29-2n-7e Pontotoc County	Comp.	25,000
Wentz, L. H., Oil Division, Ponca City	Sec. 34-26n-1w	Absp.	2,000
Wentz, L. H., Oil Division, Ponca City	Sec. 17-28n-1e	Absp.	2,500
Warren Petroleum Co., Box 198, Tulsa	Sec. 24-17n-10e	Absp.	*10,000
Westoak Gasoline Co., Box 507, Sayre	SE SW, Sec. 21-9-23w	Absp.	7,000
Wilcox, H. F., Oil & Gas Co., Tulsa	Sec. 5-8-2	Absp.	*2,500
Wirt Franklin Petroleum Corp., Ardmore	NW, Sec. 12-11n-3w	Absp.	20,000
Wiser Oil Co., Bartlesville	Sec. 31-25-17e	Comp.	2,000
Wolverine Petroleum Corp., Avant	E half, Sec. 24-24n-11e	Absp.	7,500
Wolverine Petroleum Corp., Bartlesville	SE, Sec. 13-26n-12e	Comp.	2,000
Wolverine Petroleum Corp., Dillard	SW, Sec. 22-4s-2w	Absp.	9,000
Wright, J. H., estate, Sapulpa	Kellyville	Absp.	5,000

†Owned jointly with Continental Oil Co.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PENNSYLVANIA

Alum Rock Gas Co., Oil City	Fern	Comp.	200
Atlas Oil Co., Clarion	Near Tylersburg	Comp.	350
Barbary & Hardt	Wildwood	Comp.	11
Bartoe, Harry T., Petrolia	Petrolia	Comp.	35
Bayliss & Fasenmeyer	Titusville, 2 mi. S	Comp.	1,000
Berry, Pryor	Petrolia	Comp.	25
Brown, Clara L.	Kinzua	Comp.	100
Buzard Gas Co., Emlenton	Emlenton, 1 mi. E	Comp.	50
Carnahan, Charles E., and Lida M.	Tidioute, ½ mi. W	Comp.	500
Carnegie Natural Gas Co., Lone Pine	Washington County	Absp.	1,000
Carnegie Natural Gas Co.	Mount Morris	Absp.	200
Carnegie Natural Gas Co., Waynesburg	Greene County	Absp.	4,500
Carpenter, M. A., Karns City	Fairview Twp.	Comp.	200
Chambers Oil Co.	.....	Comp.	150
Christie & Timblin	Evans City	Comp.	*25
Clinger Oil & Gas Co., Tidioute	Pagundus	Comp.	500
Clinger Oil & Gas Co., Tidioute	Hastings Bridge	Comp.	500
Cochran, John G., Sheffield	Lot 435, Sheffield Twp.	Absp.	1,100
Coffin, C. J., Chicora	Karns City	Comp.	85
Coffin, C. J., Chicora	Chicora	Comp.	85
Columbia Gas & Elec. Corp., McKinley	Elk County	Absp.	1,500
Columbia Gas & Elec. Corp., Majorville	West Twp.	Absp.	7,080
Columbia Gas & Elec. Corp., Waynesville	Franklin Twp.	Absp.	3,920
Columbia Gas & Elec. Corp., Heard	Finley Twp., West County	Absp.	2,550
Conquer, S. J.	Sheffield	Comp.	*80
Cook Oil Lease, Kelletville	Mayburg	Comp.	300
Daugherty, C. R., Y.M.C.A. Bldg., Butler	Herman, Butler County	Comp.	25
Daugherty, C. R. and M. G., Y.M.C.A. Bldg., Butler	Petrolia, Butler County	Comp.	25
Daugherty, C. R., & Co., Y.M.C.A. Bldg., Butler	Oakdale, Allegany County	Comp.	75
Dempseytown Gas Co., Oil City	Leeper	Comp.	200
Dempseytown Gas Co., Oil City	Shippenville	Comp.	100
Dunlap, Harry G., Chicora	Chicora, 1 mi. W	Comp.	11
Edwards, E. A., Titusville	Titusville	Comp.	170
Eiswerth, Hefron & Co.	Lucinda	Comp.	400
Ellenberger, W. J., & Sons	.....	Comp.	300
Elliott Bros.	Chicora	Comp.	500
Equitable Gas Co., Rogersville	¼ mi. E of Rogersville	Absp.	10,000
Equitable Gas Co., R.F.D. 1, Clarksburg, Pa.	Near Zollersville	Absp.	2,000
Federal Oil & Gas Co., McDonald	McDonald	Comp.	100
Fleming, J. E., Titusville	Grand Valley	Comp.	500
Forest Chemical Co., Sheffield	Warren County, Sheffield Twp.	Absp.	*500
Forest Oil & Gas Co., Clinton	Clinton, 3 mi. N	Comp.	300
Gamble, James	Karns City, 1½ mi. E	Comp.	75
Gould, Nancy E., & Son, R.F.D. 6, Butler	Penn Twp.	Comp.	5
Hadden, James B., Sheffield	Henry's Mill	Comp.	84
Hague & Co.	Tidioute	Comp.	500
Haskell & Bayliss	Emlenton, 4 mi. E	Comp.	150
Haskell Bros., Pleasantville	Southwest Twp., Warren County	Comp.	50
Haskell, Roth & Bayliss, Tidioute	Triumph Twp., Warren County	Comp.	400
Hickey & Rieg, Clarendon	Henry's Mill	Comp.	300
Home Gas Co., Clarion	Highland Twp.	Comp.	.....
Hope Construction & Refining Co.	Brave	Absp.	20,000
Hope Construction & Refining Co.	Imperial	Char.	3,600
Hope Construction & Refining Co.	McKeesport	Char.	*2,600
Hope Construction & Refining Co.	Mayport	Absp.	1,500
Hope Construction & Refining Co.	Yatesboro	Absp.	*900
Hunter, Livingston L. Trust, Tidioute	Trunkeyville, Forrest County	Comp.	*300
Jackson, Fred W.	Chicora	Comp.	360
Jennings, E. H., Bros. Co., 608 Columbia Bldg., Pittsburgh	Fayette Twp., Allegheny County	Comp.	1,000
Jennings, E. H., Bros. Co., 608 Columbia Bldg., Pittsburgh	Fayette Twp., Allegheny County	Comp.	150
Johnson, C. H., and H. G. Dunlap	Chicora	Comp.	60
Kapp & Brocklehurst, Tidioute	Tidioute	Comp.	200
McMeekin, Chas. T., Karns City	Karns City, 1½ mi. SW	Comp.	50
Mars Oil Co. (The), Oil City	Endeavor	C-A	*1,500
Mars Oil Co. (The), Oil City	Lewis Run	C-A	6,500
Mars Oil Co. (The), Oil City	So. Oil City	C-A	4,000
Mars Oil Co. (The), Oil City	Van	C-A	7,500
Mars Oil Co. (The)	Clarion	C-A	*1,800
Master & Hess, Inc.	Fern, 1 mi. W	Comp.	100
Midland Oil Co., Petroleum Center	Petroleum Center	Comp.	1,200
Montgomery, James, R.F.D. 1, McCoy Road	McKee's Rocks	Comp.	100
Moore, Way & Harrison	Titusville, 7 mi. N	Comp.	150
Myers Bros. & Hazzard	Tidioute, 1 mi. N	Comp.	100
National Gasoline Co.	Grand Valley	Comp.	250
National Gasoline Co.	West Hickory	Comp.	250
North Penn Gas Co., 103 Mill St., Port Allegany	Shinglehouse	Absp.	*600
O'Hara, Sarah C., 218 E. North St., Butler	Fairview Twp.	Comp.	100
Pennsylvania Fuel Supply Co.	Clarion	C-A	*800
Pennsylvania Oil Co.	Sheffield	C-A	10,000

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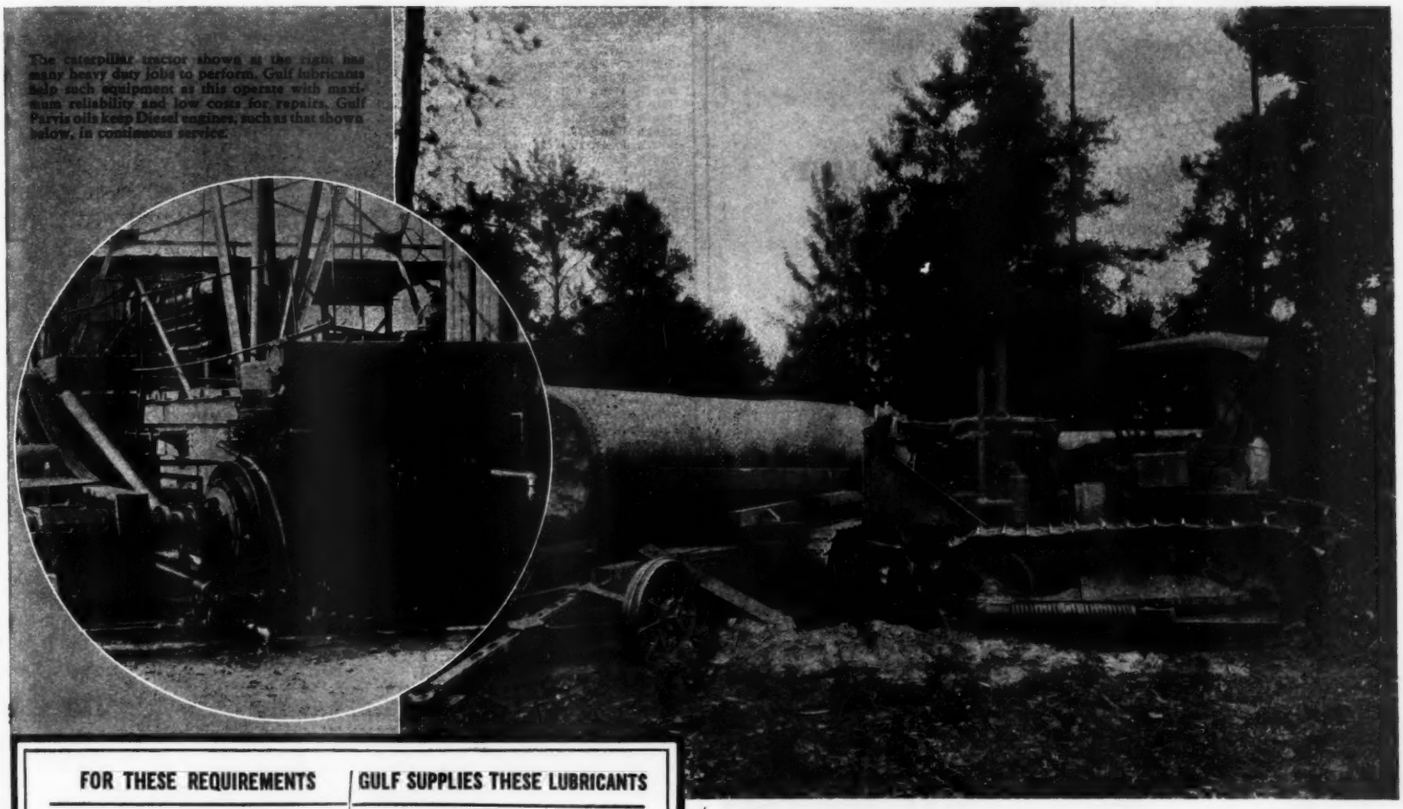
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Gasoline Engines	Gulfpride Oils Gulflube Motor Oils
Gas Compressors (*Cylinders*)	Gulfcrest Oils Gulf Parvis Oils
Air Compressors	Gulfcrest Oils Gulf Harmony Oils
Steam Pumps	Gulf Acorn Cylinder Oils Gulf Senate Cylinder Oils
Drilling Lines (*Steel*)	Gulf Lubcote
Compression Grease Cups	Gulf Supreme Cup Grease
Threads (*Pipe, Casing and Drill Stems*)	Gulf P. T. Grease
Rust Preventive (*Pipe, Casing, Drilling Tools, Etc.*)	Gulf No-Rust

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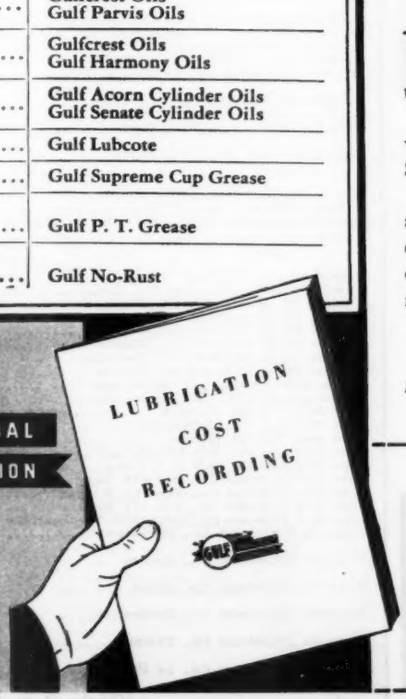

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Gulf supplies oil field operators a complete line of quality lubricants which will keep all their equipment in reliable, low cost operation. Some of the lubricants in the Gulf line are listed on this page.

A Gulf lubrication engineer will be glad to inspect your equipment and recommend the use of exactly the right type of oil or grease for each moving part. He will help you get maximum efficiency from all equipment you operate. If you are not using Gulf products and engineering service, give them a trial.

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GULF REFINING COMPANY
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Title.....

Company.....

Address.....

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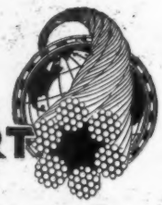

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WIRE ROPE COMPANY

Main Office and Works: Williamsport, Pa.

Branch Sales Offices: 122 S. Michigan Ave., Chicago, Ill.
Oil Country Sales Offices: Williamsport Bldg., Fourth and Midland Valley Tracks, Tulsa, Okla.; 1516 Chestnut Street, Houston, Texas. Mid-Continent Supply Co., Distributors in Texas, Louisiana and Arkansas.

Every Quality You Can Ask For
—*plus* ECONOMY—

Compare Taylor Forge Electric-Weld Steel Pipe with any pipe for comparable service. It offers extreme ductility, uniform strength, unvarying wall thickness and above all, ability to withstand rough handling in erection or laying.

As welded by Taylor Forge it is uniformly strong throughout, round, and true. Special coating and wrapping facilities provide durability beyond any conceivable service-life requirement.

Long lengths. Every length is factory tested. Large quantities are promptly available.

Taylor Forge & Pipe Works
General Offices and Works, Chicago, Ill., P. O. Box 485.
New York Office, 50 Church Street.

TAYLOR FORGE
Electric Weld Pipe

Company and plant address—	Field location—	Type of plant	Daily cap'y (gals.)
Porter Bros., Catfish	Catfish, 1 mi. E	Comp.	100
President Oil Co., Emlenton	Bruin, 2 mi. W	Comp.	50
President Oil Co., Emlenton	Emlenton, 2 mi. SW	Comp.	30
President Oil Co., Emlenton	Fryburg, 6 mi. N	Comp.	300
Price, Harry D., Renfrew	Butler Twp., Butler County	Comp.	25
Ramage, S. Y., Oil City	Venango County	Comp.	100
Ramage, S. Y., Oil City	Warren County	Comp.	50
Red Brush Oil Co., Tidioute	6 mi. S Tionesta	Comp.	40
Riddle Farm Oil Co., Karns City	½ mi. S Karns City	Comp.	50
Ritzert Bros., Chicora	Chicora	Comp.	70
Sand Hill Lease, Tidioute	Perry Twp., Armstrong	Comp.	100
Say, George K., R.F.D. 2, Karns City	Triumph Twp., Warren County	Comp.	40
Sloan & Zook Co., Kane	Kane	Absp.	1,500
Pittsburgh Oil & Gas Co., 1005 Farmers Bank Bldg., Pittsburgh	Miola	Comp.	100
Pittsburgh Oil & Gas Co., 1005 Farmers Bank Bldg., Pittsburgh	Pleasantville	Comp.	*25
Pittsburgh Oil & Gas Co., 1005 Farmers Bank Bldg., Pittsburgh	Clarion	Comp.	100
South Penn Oil Co., Pittsburgh	Evans City	Comp.	150
South Penn Oil Co., Pittsburgh	Badon	Comp.	50
South Penn Oil Co., Pittsburgh	Bradford	Comp.	550
South Penn Oil Co., Pittsburgh	South Heights	Comp.	550
South Penn Oil Co., Pittsburgh	Campbell	Comp.	150
South Penn Oil Co., Pittsburgh	Evans City	Comp.	450
South Penn Oil Co., Pittsburgh	Guffey	Comp.	150
South Penn Oil Co., Pittsburgh	Henry's Mill	Comp.	300
South Penn Oil Co., Pittsburgh	Kane	Comp.	100
South Penn Oil Co., Pittsburgh	Wright	Comp.	550
South Penn Oil Co., Pittsburgh	New Freeport	Absp.	1,000
South Penn Oil Co., Pittsburgh	Noblestown	Comp.	1,600
South Penn Oil Co., Pittsburgh	Evans City	Comp.	125
South Penn Oil Co., Pittsburgh	Parker's Landing	Comp.	80
South Penn Oil Co., Pittsburgh	President	Comp.	500
South Penn Oil Co., Pittsburgh	Tiona	Comp.	450
South Penn Oil Co., Pittsburgh	Porkey	Comp.	650
South Penn Oil Co., Pittsburgh	Sturgeon	Comp.	1,500
South Penn Oil Co., Pittsburgh	Noblestown	Comp.	125
Stephens, W. J., Grand Valley	Grand Valley	Comp.	100
Success Oil Co., Titusville	Pioneer	Comp.	2,000
Surety Oil Co., Inc., Titusville	2½ mi. S Titusville	Comp.	1,000
Tarbell & Co., Grand Valley	2 mi. from Grand Valley	Comp.	80
Thomas, R. L., Tidioute	Middle Field	Vac.	250
Tompsett Bros. Tidioute	Triumph Twp.	Comp.	500
Triangle Co., McKees Rocks	Pine Hollow Road	Comp.	350
Triumph Petroleum Co., Route 3, Tidioute	Triumph Twp., Warren County	Comp.	175
Union Gasoline & Oil Corp.	Clarion	C-A	*800
Vogebacker, A. J. and J. E.	Lucinda	Comp.	42
Wahl, A. R., Evans City	Wahl farm, Forward Twp.	Comp.	150
Warner-Caldwell Oil Co., R.F.D. 2, Titusville	Titusville	Comp.	1,000
Wheeler, D. H., Box 86, Petrolia	Petrolia, 1½ mi. SE	Comp.	200
Will, Jacob W., McDonald	Canonsburg	Comp.	55
TEXAS			
Airolene Gasoline Corp., Kennedy Bldg., Tulsa, Okla.	Sec. 9, Blk. 27, Magic City R.R. Sur.	Absp.	8,000
Amerada Petroleum Corp., Drawer C, Fry	Chas. Betts Sur. No. 626, Brown County	Absp.	20,000
American Natural Gasoline Co., Ramsdell	Sec. 100, Blk. 23, H.&G.N. Sur.	Absp.	60,000
Arab Gasoline Corp., Eastland	SE. Sec. 17, Blk. 4, H.& T.C. Ry. Sur.	Absp.	25,000
Barker & Goforth	Ranger, 5 mi. W	Absp.	*1,500
Big Lake Oil Co., Texon	Sec. 2, Blk. 2, Reagan County	Absp.	50,000
Breckenridge Gasoline Co., Breckenridge	Breckenridge	Absp.	12,000
California United Gasoline Corp., Coleman	Overall ranch	C-A	10,000
California United Gasoline Corp., Coleman	Weaver ranch	C-A	10,000
Canadian River Gas Co., Colorado Springs, Colo.	Sec. 33, Blk. P. Mc., E.L. R.R. Sur., Moore County	Absp.	30,000
Cannon Gasoline Co., Box 963, Amarillo	2½ mi. N Amarillo	Absp.	5,000
Cargray Corp., Amarillo, Tex.	Sec. 46, Blk. 4	Absp.	100,000
Coltexo Corp., Lefors	Sec. 2, A.C.H.&B. Sur., Gray County	Absp.	30,000
Coltexo Corp., Lefors	Sec. 1, H.&G.N., Blk. B-2, Gray County	Absp.	30,000
Coltexo Corp., Lefors	B.&B. Sur. 2, Gray County	Absp.	10,000
Columbian Gasoline Corp., Shamrock	Sec. 46, H.&G.N., Blk. 17, Wheeler County	Absp.	5,000
Consolidated Gasoline Co., Eastland	Eastland, 2 mi. SW	Absp.	12,000
Clymore Co., Inc., Corpus Christi	Refugio	Absp.	*30,000
Crawford Gasoline Co., New York City	Skellytown	Absp.	5,000
Empire Oil & Refining Co., Pampa	NE. Sec. 152, Blk. 3	Absp.	30,000
Excelsior Refining Co., Henderson, Tex.	M. J. Pru Sur., 9 mi. from Henderson	Absp.	20,000
Gladewater Gasoline Co., Gladewater	J. S. Crosby Sur.	Comp.	16,000
Graham Oil & Gas Co., Graham	Morrison farm	Absp.	8,000
Gulf Production Co., Fort Worth	Sec. 1, L.A.L. Sur., Stephens County	Absp.	10,600
Gulf Production Co., Fort Worth	S. B. Hollingsworth and H. B. Dance Sur., Rusk County	Comp.	15,000
Hanlon Gasoline Co., Breckenridge	3 mi. SE Breckenridge	Absp.	50,000
Hanlon Gasoline Corp. of Texas	Near Gladewater	Absp.	25,000
Harmony Gasoline Corp., Ardis Bldg., Shreveport, La.	S. G. Smith farm, Wm. H. Castleberry Sur., Gregg County	Absp.	20,000
Henderson Co., Sanford	Sanford	Absp.	50,000
Huber Petroleum Co., Box 278, Borger	Sec. A.&B. Sur.	Absp.	33,000
Humble Oil & Refining Co., Rising Star	Brown County	Absp.	10,000
Humble Oil & Refining Co., Neches	Anderson County	C-A	7,500
Humble Oil & Refining Co., Overton	Rusk County	Comp.	29,000
Humble Oil & Refining Co., Kilgore	Rusk County	Comp.	17,000
Humble Oil & Refining Co., Bellville	Austin County	Absp.	10,000
Humble Oil & Refining Co., Conroe	Montgomery County	Absp.	20,000
Lisbon Gasoline Co., Inc., Shreveport	Rusk County	Comp.	15,000
Lisbon Gasoline Co., Inc., Shreveport	1 mi. W Carlisle	Comp.	15,000
Lone Star Gas Co., Petrolia	3 mi. S Petrolia	Absp.	15,000
Lone Star Gas Co., Gainesville	2½ mi. W Gainesville	Absp.	*15,000
Lone Star Gas Co., Gordon	2 mi. E Gordon	Absp.	25,000
Lone Star Gas Co., Box 488, Ranger	9 mi. S Ranger	Comp.	8,000
Lone Star Gas Co., R.F.D. 1, Cisco	7 mi. SE Moran	Absp.	5,000
Lone Star Gasoline Co., Box 788, Ranger	Ranger (3)	Absp.	65,000
Lone Star Gasoline Co., Box 788, Ranger	Eastland	Absp.	6,500
Lone Star Gasoline Co., Box 788, Ranger	Olden	Absp.	8,500
Lone Star Gasoline Co., Drawer 00, Breckenridge	Breckenridge	Absp.	31,000
Magnolia Petroleum Co., Burkburnett	J. G. Hardin farm, 1 mi. NW Burkburnett	Comp.	4,250
Magnolia Petroleum Co., Electra	Sec. 17, Blk. 13, H.&T.C. Ry. Co. Sur.	Comp.	4,500
Magnolia Petroleum Co., Olden	R. S. Harris farm, Matt Finch Sur.	Absp.	9,000
Magnolia Petroleum Co., Desdemona	Caruth farm, Smelzer Sur.	Absp.	7,500
Magnolia Petroleum Co., Pampa	NE. Sec. 82, Blk. 3, I.&G. N. Ry. Sur.	Absp.	4,250
Magnolia Petroleum Co., Le Fors	Sec. 30, Blk. B-2, H.&G. N. Ry. Sur.	Absp.	15,000

(Continued on Next Page)

Company and plant address—	Field location—	Type of plant	Daily cap'y (gals.)
Magnolia Petroleum Co., Skellytown	Sec. 91, Blk. 4, I.&G.N. Ry. Sur.	Absp.	3,500
Magnolia Petroleum Co., Magic City	NE, Sec. 39, Blk. 24, H. &G.N. Sur.	Absp.	2,000
Magnolia Petroleum Co., Kings Mill	Sec. 153, Blk. 3, I.&G.N. Sur.	Absp.	10,000
Marathon Oil Co., Thompson Bldg., Tulsa, Okla.	J. W. Hill lease, Stephens County, Eliasville	Absp.	7,000
Marathon Oil Co., Thompson Bldg., Tulsa, Okla.	Tullos lease, Stephens County, Eliasville	Absp.	18,000
Midland Gasoline Co., Box 26, Conroe	Conroe Field, Montgomery County	Absp.	15,000
Buckeye Natural Gasoline Corp.	SE, Sec. 41, Blk. 24, Wheeler County	Absp.	15,000
Ockland Gasoline Production Co., Tulsa, Okla.	Desdemona	Absp.	4,000
Omar Gasoline Co., Wichita Falls	NW of Burkburnett	Comp.	11,500
Orfic Gasoline Production Co. of Texas, 508 McBirney Bldg., Tulsa, Okla.	Desdemona	Comp.	4,000
Pacific American Gasoline Co. of Texas, Box 278, Borger	Sec. 28, Blk. Y, A.&B. Sur.	Absp.	25,000
Parade Gasoline Co., Inc., Overton	C. C. and J. E. Giles lease, Joiner area, Rusk County	Absp.	30,000
Paramount Natural Gasoline Co.	Sec. 28, Blk. D-2, H.&G. M. Sur.	Absp.	*16,000
Phillips Petroleum Co., Bellco	NE NW Sec. 51, H.&G.N. Sur., Wheeler County	Absp.	6,000
Phillips Petroleum Co., Bowers	W half, Sec. 62, H.&G.N. Sur., Blk. B-2, Gray County	Absp.	50,000
Phillips Petroleum Co., Canadian	NW SE, Sec. 1, Blk. X02, Hutchinson County	Absp.	20,000
Phillips Petroleum Co., Carson	W. central, Sec. 115, I.&G. N. Sur., Blk. 5, Carson County	Absp.	20,000
Phillips Petroleum Co., Eliasville	6.88 ac. N half, Sur. 1,174 T.E.&L., Stephens County	Absp.	12,000
Phillips Petroleum Co., Frankell	Sec. 51, T.&P. Sur., Blk. 6, Stephens County	Absp.	8,500
Phillips Petroleum Co., Gorman	SE cor. Thos. Mulryne Sur. A377, H.&T.C., Blk. 1, Eastland County	Absp.	8,000
Phillips Petroleum Co., Gray	E half, Sec. 32, H.&G.N. Sur., Blk. 2, Gray County	Absp.	100,000
Phillips Petroleum Co., Helios	W. A. Eaken, 132-ac. tract, Eastland County	Absp.	15,000
Phillips Petroleum Co., Herron City	SE, Sec. 20, P. J. Humphrey Sur. A-153	Absp.	9,000
Phillips Petroleum Co., Hohertz	12 ac., Sec. 63, Blk. 4, T.&P.R.R. Sur., Stephens County	Absp.	5,000
Phillips Petroleum Co., Ibex	NW, Sec. 28, Blk. AL, Shackelford County	Absp.	20,000
Phillips Petroleum Co., Johnson	Cen. 60 ac., S half, Sec. 69, Blk. 46, H.&T.C. Sur., Hutchinson County	Absp.	50,000
Phillips Petroleum Co., Judkins	W 60 ac., N half S half Sec. 1, University land, Ector County	Absp.	15,000
Phillips Petroleum Co., Le Fors	NE NE, Sec. 56, Blk. 25, H.&G.N. Sur., Gray County	Absp.	*15,000
Phillips Petroleum Co., McCamey	NE NE, Sec. 216, C.C. S.D.&R.G.N.G.R.R. Sur., Blk. F, Crane County	Absp.	50,000
Phillips Petroleum Co., North	SW, Sec. 35, and NW, Sec. 36, I.&G.N. Sur., Blk. 3, Gray County	Absp.	60,000
Phillips Petroleum Co., Pampa	W Half SW, Sec. 88, H.& G.N. Sur., Blk. B-2, Gray County	Absp.	60,000
Phillips Petroleum Co., Panhandle	SW, Sec. 113, I.&G.N.R.R. Sur., Blk. 5, Carson County	Absp.	15,000
Phillips Petroleum Co., Pantex	SE cor. Mary Whitley Sur., Blk. 8, Hutchinson County	Absp.	50,000
Phillips Petroleum Co., Rockcreek	N half NW, Sec. 22, Blk. Y, A.&B. Sur., Hutchinson County	Absp.	60,000
Phillips Petroleum Co., South Bend	20 ac., N. centr. J. Garrett Sur. A-108, Young County	Absp.	9,000
Phillips Petroleum Co., Sanford	Sec. 81, Blk. 46, H.&T.C. R.R. Sur., Hutchinson County	Absp.	20,000
Phillips Petroleum Co., Texroy	SE, Sec. 3, Blk. B-3, D.& S.E.R.R. Sur., Hutchinson County	Absp.	50,000
Pure Oil Co., Van	Van Zandt County	Comp.	37,000
Red River Oil Co., Box 712, Tulsa, Okla.	Electra	Comp.	5,000
Roeser & Pendleton, Inc., Fort Worth	NE 85, E.T. Ry. Sur., Shackelford County	Absp.	25,000
Roeser & Pendleton, Inc., Fort Worth†	Reynolds ranch, Shackelford County, 7 mi. NW Albany	Absp.	30,000
Sabine Valley Gasoline Co., Inc., Longview		Comp.	30,000
Shamrock Oil & Gas Co., Pampa	Sec. 50, Blk. 25, H.&G.N. Sur.	Absp.	15,000
Shell Petroleum Corp., Skellyville	NW 105, Blk. 4, I.&G.N. Sur.	Absp.	5,000
Shell Petroleum Corp., Pampa	SW, Sec. 83, Blk. 3, I.& G.N. Sur.	Absp.	8,000
Shell Petroleum Corp., Pampa	SE, Sec. 107, Blk. 5, I.& G.N Sur.	Absp.	12,000
Signal Gasoline Co. of Texas, Box 157, Best	Best, Reagan County	Absp.	50,000
Sinclair Prairie Oil Co., Box 1674, Longview	J. Masely Sur.	Comp.	50,000
Skelly Oil Co., Box 178, Stinnett	NW cor. Matilda Robinson Sur., Moore County	Absp.	10,000
Skelly Oil Co., Box 816, Burkburnett	G. W. Darby or J. G. Hardin Sur.	Comp.	7,000
Skelly Oil Co., Box 127, Skellytown	NE, Sec. 174, Blk. 3	Absp.	18,000
Skelly Oil Co., Box 336, Whittenburg	SW, Sec. 4, Blk. B-4, D.& S.E. Ry. Sur.	Absp.	11,500
Skelly Oil Co., Box 952, Burkburnett	H.T.&B.R.R. Sur., N 110 ac., Wichita County	Comp.	1,500
Skelly Oil Co., Box 127, Skellytown	S half, Sec. 88, Blk. 4, I.&G.N. Sur.	Absp.	20,000
Smith Brothers Refining Co., McLean	McLean	Absp.	40,000
Southern Gasoline Co., Ranger	Tiffin	Absp.	2,500
Stanolind Oil & Gas Co., Desdemona	Desdemona No. 5	Comp.	10,000
Stanolind Oil & Gas Co., Desdemona	Desdemona No. 6	Absp.	10,000
Sunray Oil Co., Tulsa, Okla.	Sunray, Moore County	Absp.	18,000
Texas Co., The (Delaware), Electra	½ mi. NW Electra	Comp.	9,300
Texas Co., The (Delaware), Burkburnett	3 mi. NW Burkburnett	Comp.	33,000
Texas Co., The (Delaware), Olney	2½ mi. NE Olney	Comp.	7,000
Texas Co., Foard City	15 mi. NW Foard City	Comp.	10,000
Texas Gasoline Co., Desdemona	1½ mi. from Desdemona	Absp.	2,000
Texas Pacific Coal & Oil Co., Fort Worth	Caddo	Absp.	10,000
Texas Pacific Coal & Oil Co., Fort Worth	Eliasville	Absp.	10,000
Texas Pacific Coal & Oil Co., Fort Worth	Strawn	Absp.	5,000
Texas Pacific Coal & Oil Co., Fort Worth	Eliasville	Absp.	10,000
Texoma Natural Gas Co., 20 N. Wacker Drive, Chicago, Ill.	Fritch, Sec. 5, T.T.R.R. Sur Blk. Y-2	Absp.	60,000

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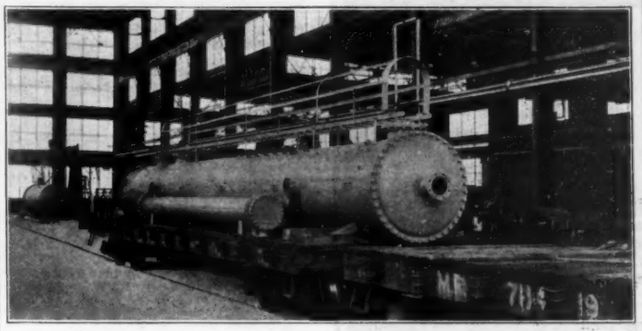

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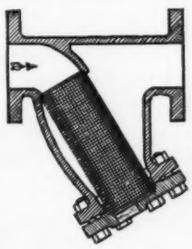
Send us your inquiries.

J. P. DEVINE MFG. CO., INC.
Subsidiary of Mt. Vernon Car Mfg. Co.
MOUNT VERNON, ILL.

NOTICE

Our facilities include a large Stress-relieving Oven, and an X-ray Department for the fabrication of Class I and Class II vessels up to 11′ in diameter and 100′ in length.

STRAINERS



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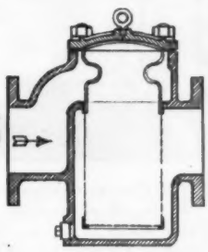

PIPE scale, boiler scale, joint compound and other foreign matter can often be the cause of much damage to automatic equipment. Unduly rapid wear, unsatisfactory operation, or complete failure can frequently be attributed to pipe line impurities.

To avoid such difficulties, experienced engineers are now making it a practice to install strainers wherever possible. Strainers afford desirable protection to pressure regulators, steam traps, meters, valves, pumps, turbines—all equipment with internal moving parts.

Considering the moderate cost of Davis Strainers, their use is one of the most profitable equipment investments that can be made.

The Davis Basket Type Strainer is used extensively on suction and pressure pipe lines carrying water, oil and other fluids. Being without moving parts, it functions in a thoroughly reliable manner. The only possible maintenance cost is screen cleaning.

In the Davis Strainer, the basket is greater in diameter than the corresponding pipe size. The body passages and the screen have excess area. This gives an absolute minimum pressure drop.

Send for Bulletin 100

AUTOMATIC VALVE SPECIALISTS

DAVIS REGULATOR COMPANY
2543 S. WASHTENAW AVENUE
CHICAGO, ILLINOIS

Company and plant address—	Field location—	Type of plant	Daily cap'y (gals.)
United Carbon Co., Charleston, W. Va.	Breckenridge	Absp.	4,000
United Gas Public Service Co., Box 2492, Houston	Jane Thorpe Sur., Panola City	Absp.	8,000
United Gas Public Service Co., Box 2492, Houston	Refugio Field	Absp.	25,000
Waggoner Gasoline Co., Electra	Sec. 33, Blk. 4, Wilbarger County	Absp.	20,000
Texas Carbon Industries, Inc., Sayre, Okla.	7 mi. N Breckenridge	Absp.	6,000
Western Oil Corp. of Texas, Philcade Bldg., Tulsa, Okla.	Electra	Comp.	2,000
West Texas Gas Co., Lubbock	Sec. 46, Blk. 2, A.G.&M. Sur.	Absp.	10,000
Wilcox, H. F., Oil & Gas Co., Tulsa, Okla.	Sec. 61, Blk. 3, I.&G.N. Sur.	Absp.	8,000

†Owned jointly with Continental Oil Co.

WEST VIRGINIA

American Oil Development Co., Pittsburgh, Pa.	Tyler County	Comp.	1,000
American Oil Development Co., Pittsburgh, Pa.	Pleasants County	Comp.	100
American Oil Development Co., Pittsburgh, Pa.	Tyler County	Comp.	100
Carbide & Carbon Chemicals Corp., 30 E. 42nd St., New York, N. Y.	Hastings	Comp.	1,000
Carbide & Carbon Chemicals Corp., 30 E. 42nd St., New York, N. Y.	Diamond	Comp.	2,500
Carnegie Natural Gas Co., Hundred	Hundred	Absp.	3,300
Carnegie Natural Gas Co., Pine Grove	Pine Grove	Absp.	3,000
Carnegie Natural Gas Co., Underwood	Underwood	Absp.	3,000
Carnegie Natural Gas Co., Wooduff	Woodruff	Absp.	1,800
Carnegie Natural Gas Co., Toll Gate	Ritchie County	Absp.	....
Casto Oil Co., 318½ Juliana St., Parkersburg	Pleasants, Tyler and Ritchie Counties	Comp.	250
Chemical Oil & Gas Co., Big Bend	Grantsville	C-A	500
Cumberland & Allegheny Gas Co.	Jane Lew, 3 mi. S	Absp.	3,000
Dinsmoor & Co., St. Marys	Pleasants County	Comp.	346
Dun Mar Oil & Gas Co., Route 3, Fairview	Jarke Run	Comp.	50
Falling Rock Cannel Coal Co.	Weir	Absp.	3,000
Federal Oil & Gas Co., Elizabeth	Elizabeth, S	Comp.	250
Federal Oil & Gas Co., Weston	Weston, S mi.	Comp.	500
Hapgood, R. T., & Co., Charleston	Cedar Grove	Char.	3,500
Henighan & Hanlon, Sistersville	Doddridge County	Comp.	200
Hope Construction & Refining Co.	Barren Creek	Absp.	*12,000
Hope Construction & Refining Co.	Bristol	Absp.	8,000
Hope Construction & Refining Co.	Littleton	Absp.	*15,000
Hope Construction & Refining Co.	Mount Clair	Absp.	2,500
Hope Construction & Refining Co.	Pine Grove	Absp.	40,000
Hope Construction & Refining Co.	Rachel	Absp.	*10,000
Hope Construction & Refining Co.	Salem	Absp.	4,000
Hope Construction & Refining Co.	Spencer	Absp.	*1,000
Hope Construction & Refining Co.	Waverly	Absp.	5,000
Jennings Oil Co., 608 Columbia Bldg., Pittsburgh	Wetzel County	Comp.	100
Kenawa Oil Co., 608 Columbia Bldg., Pittsburgh	Wetzel County	C-A	1,200
Kenawa Oil Co., 608 Columbia Bldg., Pittsburgh	Wetzel County	Comp.	300
Melrose Oil & Gas Co., Sistersville	Stealey Farm	Comp.	25
Melrose Oil & Gas Co., Sistersville	Gorrell Farm	Comp.	25
National Compressing Co., Parkersburg	Rutherford, Ritchie County	Comp.	50
New York Petroleum Co., Box 563, Parkersburg	Ritchie County	Comp.	250
Oil & Gas Co., 318½ Juliana St., Parkersburg	Ritchie County	Comp.	250
Owens, Libbey-Owens Gas Dept., Charleston	South Malden, Kanawha County	Absp.	10,000
Pure Oil Co., Dawes	Kanawha County	Comp.	11,000
Ramage, S. Y., Oil City	Pleasants County	Comp.	50
Reno Oil Co., Sistersville	Tyler County	Comp.	50
Reno Oil Co.	Ritchie County	Comp.	33
Reno Oil Co.	Tyler County	Comp.	44
Reno Oil Co.	Ritchie County	Comp.	50
Reno Oil Co.	Ritchie County	Comp.	75
Reserve Gas Co., Box 1756, Pittsburgh, Pa.	Valley Chapel	Absp.	20,000
Pittsburgh Oil & Gas Co., 1005 Farmers Bank Bldg., Pittsburgh, Pa.	Sistersville, Tyler County	Comp.	750
Pittsburgh Oil & Gas Co., 1005 Farmers Bank Bldg., Pittsburgh, Pa.	Porters Falls, Wetzel County	Comp.	*100
Pittsburgh Oil & Gas Co., 1005 Farmers Bank Bldg., Pittsburgh, Pa.	Macfarlan, Ritchie County	Absp.	1,500
South Penn Oil Co., Pittsburgh, Pa.	Alvy	Comp.	1,500
South Penn Oil Co., Pittsburgh, Pa.	Bulls Mills	Comp.	500
South Penn Oil Co., Pittsburgh, Pa.	Blue Creek	Comp.	1,700
South Penn Oil Co., Pittsburgh, Pa.	Blue Creek	Comp.	3,000
South Penn Oil Co., Pittsburgh, Pa.	Bula (near Wana)	Comp.	400
South Penn Oil Co., Pittsburgh, Pa.	Clay	Comp.	2,200
South Penn Oil Co., Pittsburgh, Pa.	Coco	Comp.	2,200
South Penn Oil Co., Pittsburgh, Pa.	Fink	Comp.	1,000
South Penn Oil Co., Pittsburgh, Pa.	Glenville	Comp.	1,100
South Penn Oil Co., Pittsburgh, Pa.	McFarlin	Comp.	2,000
South Penn Oil Co., Pittsburgh, Pa.	Mannington	Comp.	1,500
South Penn Oil Co., Pittsburgh, Pa.	Metz	Comp.	1,500
South Penn Oil Co., Pittsburgh, Pa.	Pine Grove	Comp.	2,500
South Penn Oil Co., Pittsburgh, Pa.	Shirley	Comp.	500
South Penn Oil Co., Pittsburgh, Pa.	Shirley	Comp.	1,200
South Penn Oil Co., Pittsburgh, Pa.	Smithfield	Comp.	3,000
South Penn Oil Co., Pittsburgh, Pa.	Spencer	Comp.	2,600
South Penn Oil Co., Pittsburgh, Pa.	Statler Run	Comp.	2,200
South Penn Oil Co., Pittsburgh, Pa.	Walton	Comp.	2,400
South Penn Oil Co., Pittsburgh, Pa.	Wolf Summit	Comp.	2,000
South Penn Oil Co., Pittsburgh, Pa.	Yawkey	Comp.	3,000
Sutton Bros., Inc., Steubenville, Ohio	Hancock County	Comp.	*200
Tyler Oil Co., Sistersville	Tyler County	Comp.	49
Tyler Oil Co., Sistersville	Tyler County	Comp.	35
Tyler Oil Co., Sistersville	Tyler County	Comp.	24
Union Gasoline & Oil Corp., Rosby's Rock	Clay Township	Absp.	1,740
Union Gasoline & Oil Corp., Porters Falls	Green Township	Absp.	6,540
Viking Gasoline Corp., Charleston	Morgantown	Char.	1,000
Viking Realty Co., Martha	Cabell County	Char.	1,000
Virginian Gasoline & Oil Co., Sandyville	Jackson County	Char.	40,000
Virginian Gasoline & Oil Co., Ona	Cabell County	Absp.	*18,000
Virginian Gasoline & Oil Co., Charleston	Kanawha County	Char.	25,000
Virginian Gasoline & Oil Co., Clendenin	Kanawha County	Absp.	40,000
Virginian Gasoline & Oil Co., Charleston	Kanawha County	Char.	2,000
Virginian Gasoline & Oil Co., Spencer	Roane County	Char.	12,000
Virginian Gasoline & Oil Co., St. Albans	Kanawha County	Char.	3,500
Virginian Gasoline & Oil Co., Louisia, Ky.	Wayne County	Char.	*3,500
Virginian Gasoline & Oil Co., Hubball	Lincoln County	Char.	12,000
Virginian Gasoline & Oil Co., Mammonth	Kanawha County	Absp.	2,500
Virginian Gasoline & Oil Co., Stoffel	Kanawha County	Absp.	1,500
Virginian Gasoline & Oil Co., Three Mile	Kanawha County	Absp.	3,500
Virginian Gasoline & Oil Co., Pad	Roane County	Absp.	800
Watson, G. L., Parkersburg	Belmont	Comp.	50
Wahl, A. R., Evans City	Foward Twp., Butler County	Comp.	150
Wiser Oil Co., Sistersville	Roane County	Comp.	100

WYOMING

Continental Oil Co., Denver, Colo.	Sec. 5, R. 78w, T. 39n	Absp.	15,000
New York Oil Co., P.O. Box 1091, Casper	T. 32, R. 95, Sec. 10	Absp.	1,500
Ohio Oil Co., Manville	Niobrara County	Absp.	*7,500
Ohio Oil Co., Rock River	Carbon County	Absp.	4,500
Ohio Oil Co., Columbus	Natrona County	Absp.	14,400
Ohio Oil Co., Kirby	Hot Springs	Comp.	7,560
Producers & Refiners Corp., Casper	NW, Sec. 7-26-89	Absp.	15,000
Sinclair Wyoming Oil Co., Bairoil	NE, Sec. 20-26n-91w	Comp.	1,200
Sinclair Wyoming Oil Co., Bairoil	NE SW ¼, Sec. 7-26n-89w	Absp.	5,000
Standard Engineering Corp., Box 1739, Casper	Casper	Absp.	2,500
Stanolind Oil & Gas Co., Tulsa, Okla.	Midwest	Comp.	130,000
Stanolind Oil & Gas Co., Tulsa, Okla.	Elk Basin	Comp.	*2,000

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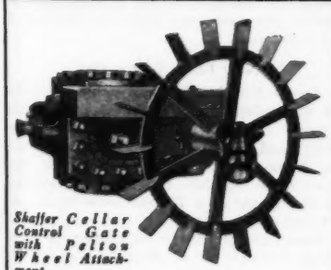

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Among Gulf Coast Drilling Contractors

DeArman Brothers are drilling below 3,900 feet on a well for Anderson & Kerr, 3½ miles south of Plantersville, in Grimes County. Contract is to 4,500 feet.

C. & C. Drilling Co. has set and cemented the oil string on No. 7 Davis Holmes for the Gem Oil Co. at Livingston. Same contractors are rigging up on No. 2 Watt for the Gem Oil Co. in the same field, and are clearing location for No. 3 Watt for the same company in the same field.

Edwards Drilling Co. is preparing to drill a 7,000-foot test for the Woodley Petroleum Co. on Thistlewaite Lumber Co. acreage in St. Landry Parish, Louisiana, instead of East Baton Rouge Parish, as previously reported. Same contractor is rigging up to drill a well for the Moretex Corp. in the Conroe Field. The Edwards company also expects to sign a contract for three additional wells in the next several days.

Harvey & Rush are preparing to start a 6,800-foot wildcat test for Frazier and Greer north of Kountz on the Sternenberg property in Hardin County.

Ben (Bud) Coyle has one rig running on No. 11 Arriola fee, for the Republic Production Co., in the Arriola Field, Jefferson County; has one rig running on No. 5 Castle for the Fohs Oil Co. at Old Town Bay Field near Lake Charles; and has one rig running on No. 2 Castle for the Fohs Oil Co. in the same field. Latter rig is reworking this well, which was originally completed as a gas well. It is hoped to cut off enough of the upper gas sand to complete as an oiler.

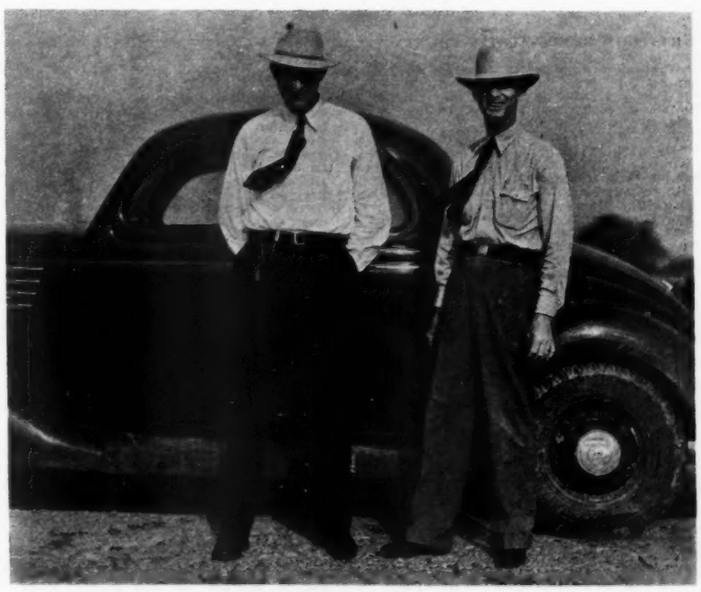
San Patricio Drilling Co. is drilling No. 4 Theresa Petrich in the Tomball Field for E. J. Nicklos. This is San Patricio's second well in the Tomball Field for this operator.

Rutherford Drilling Co. is drilling a well in the Sam Fordyce Field, Hidalgo County, for Skelly Oil Co.

Smith & McDannald report only one rig movement during the week, skidding from No. 4 Isringhausen to No. 8 Larcade, for the Superior Oil Producing Co. in the Boscoe Field, Louisiana. The company has eight rigs running as previously reported.

Cron & Gracey have surface pipe set and cemented on a well for the Texas Co. in the Manvel Field, Brazoria County; have set surface pipe on a well for the Repollo Oil Co. in the Eunice Field, New Mexico; and have set the oil string in a well for the Sinclair Prairie Oil Co. in East Texas. The company has seven other rigs running as previously reported.

W. V. (Bill) Bowles is rigging up to drill No. 8-A Belcher for the Texas Co. in the Manvel Field. A second rig, which recently completed a third producer in the same field for Bowles & Borsodi, is temporarily stacked pending decision to drill No. 4 Norvell, location for which has been made north of No. 2 Norvell, for Bowles & Borsodi in the Manvel Field.



H. P. McGuirt (left), until recently field superintendent for the United North & South Development Co. at Buckeye, Matagorda County, a position he had held, with only one break, since 1920, has become associated with the Authorized Appleman Bit Co. of Houston, and will have charge of the company's shop in the new Port Lavaca Field, Calhoun County. McGuirt began his oil field career in 1908 as a roughneck, and during the intervening years until he became associated Edgar B. Davis in 1920, spent time and gathered experience in oil fields throughout Texas, Louisiana, Arkansas and Oklahoma, including a six months period in Mexico. He holds the honor of drilling the first well that ever produced from the Edwards lime, and altogether superintended the drilling of more than 1,000 wells for Edgar B. Davis (United North & South Development Co.) in the Luling area. As superintendent for Edgar B. Davis in the Buckeye Field, he brought in the first producing wells and supervised the drilling of all other wells in the field, including one that approached the 10,000-foot depth very closely. A. W. (Tony) Short, who is also associated with the Authorized Appleman Bit Co., and who has been moved recently from East Texas to the Gulf Coast area, started his oil field career with the Standard Oil Co. of Louisiana, at Homer, La., in 1918. He subsequently spent several years in the employ of Atlantic Oil Producing Co. and Continental Supply Co. in North Texas and Oklahoma areas. In 1931, he went to East Texas, where he became associated with his present company.

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Five Locations Follow Placedo Discovery Well in Victoria County; Deep Wildcat Showing

By F. L. SINGLETON
Gulf Coast Bureau, The Oil and Gas Journal

HOUSTON, Tex., Apr. 29.—Since the completion last week of L. A. Gillespie and others' No. 1 Henderson and Pickering in the Placedo area, 2½ miles southwest of the Keeran Field, Victoria County, three more locations were announced for the area during the week, bringing the total number of locations to be drilled to five. New locations included Costa Oil Co.'s No. 1 Schovjsa, 330 feet out of the northeast corner of Lot No. 14, in the William Rupley Survey, approximately one-half mile southwest of the discovery well. Magnolia Petroleum Co. is moving in material for its No. 1 Henderson and Pickering, an east offset to the discovery, and L. A. Gillespie and others have made location for their No. 1 Farber, approximately one-half mile northwest of the discovery in the Nancy Dean Survey. Surface casing has been cemented in the two locations made last week by Gillespie and Superior Oil & Gas Co. One and one-half miles northeast of the Eugenio Benevides Survey, it is reported that Barnsdall Oil Co. purchased the Helmerich 80-ac. lease in Lot 2. The consideration was part cash and the rest in oil payments, with the purchaser agreeing to drill a well. Considerable trading has been going on in the area and some royalty is being sold as high as $225 per acre base.

The discovery well, which was officially completed for an initial production of 11 bbls. per hour through a one-sixteenth inch choke, with tubing pressure 1,600 pounds and casing pressure 2,300 pounds, is producing from the base of the Frio encountered from 6,005-19 feet, the total depth. The operators have placed the well on a one-sixty-fourth inch choke to conform to the regulations of the Railroad Commission, and the oil is being run to storage.

Dickinson Field

In the Dickinson Field, Galveston County, Stanolind Oil & Gas Co. has made its first location on the state land, which was awarded the company a few months ago, when the leases were put up for bids. Its No. 1 State is located on the bank of the Dickinson Bayou, and is 147 varas south of Humble Oil & Refining Co.'s No. 1 Jones. Offsetting Pure Oil Co.'s No. 1 Shelor, a distillate producer in the B.B.B.&C. Survey. Humble Oil & Refining Co. is moving in material for its No. 1 Townes, located 440 feet east of the west line, and 550 feet north of the north bank of the Dickinson Bayou. The sixth deep producer for the field has been indicated at Humble Oil & Refining Co.'s No. 3-A Maco Stewart in the John Sellers Survey. Seven-inch casing was cemented at 8,072 feet and the operators are waiting on cement to set, with the bottom of the hole at 8,146 feet. Oil sand was cored from 8,077-89 feet, 8,116-18 feet and from 8,132-33 feet. It topped the Frio at 7,649 feet.

On the Batson Dome

Three tests being drilled on the south flank of the Batson Dome, Hardin County, have reached interesting depths and are being watched with considerable interest. John Deering's No. 3 Hooks, an east offset to the operator's No. 1 Cruse, which opened production from a new sand below 5,500 feet, is preparing to core deeper from a total depth of 5,642 feet. Shale with thin streaks of sand and sandy shale showing oil was cored from 5,590-5,613 feet, and sand and sandy shale showing oil was cored from 5,673-92 feet. The test is apparently somewhat lower than the No. 1 Cruse that was completed at a total depth of 5,567 feet. Approximately 5,000 feet east of J. H. Burt and others' No. 1 Jordan, a producer completed at 4,927 feet, John Deering and others' No. 1 Bullock is coring in shale below 5,588 feet, with no shows being reported. Sterling Oil & Refining Co.'s No. 1 Doucette, the most westerly test from the dome in the W. Donoho Survey, is waiting on orders at a total depth of 5,672 feet. Sand and sandy shale showing oil was cored from 5,610-19 feet. The Cockfield sand from which the Cruse test is producing, was topped in the test at 5,540 feet and is bottomed in the upper Saline Bayou topped from 5,633-52 feet. The operators will no doubt make a test of the present showing and if commercial production is developed, it will open the third producing horizon for the south flank of the dome.

Hastings Field

Another interesting location was announced for the Hastings Field, northeastern Brazoria County, by Stanolind Oil & Gas Co. for its No. 1 Williams, located 446 feet north and 1,126 feet west from the most easterly southwest corner of a 81.3-acre lease in the A.C.H. &B. Survey No. 1. It is approximately one-half mile north and slightly west of the company's No. 1 Wooster that extended production about the same distance north, when it was completed for a producer last week.

Hankamer Field

In the Hankamer Field, Liberty County, Gulf Production Co.'s No. 1 Hankamer in the George Stingler Survey, was completed at a total depth of 3,327 feet for an initial production of 19 bbls. per hour through a one-quarter inch choke with working pressure 1,220 pounds. This is the first producer to be completed out of the H.&T.C. Survey, Block No. 2, by the company and it extends production a short distance southwest. On the west flank of the dome, Cretaceous Oil Corp. is moving in material for its No. 3 Ezzell, located 200 feet from the north and 800 feet from the east line of the lease in the Levi Barrow Survey.

In Harris County

Johnston and Johnston's No. 1 fee land, a wildcat test located in the south Houston district, Harris County, is being watched with considerable interest as it drills below 4,753 feet in shale. While no definite markers are available on the test it is reported to be running "high." Close-in royalty is being offered as high as $100 per acre base. It is located in the H.T.&B. Survey, Block No. 5.

The outpost test of Sterling Oil & Refining Co., No. 1 W. A. Gamble, located approximately 1 mile west of production in the H. N. Little Survey, has been abandoned at 4,124 feet, after the operators had recovered nine fourbles of salt water on a 10-minute drill stem test from 3,950-98 feet. It was originally drilled to the Oligocene sand at 6,004 feet, but was plugged back, sidetracked and redrilled to its present depth. In the north end of the field and approximately 1,000 feet east of production in Lot 57, H.T.&C. Survey, Bowles and Borsodi's No. 2 Norvell Investment was recompleted during the week for an initial production of 22 bbls. per hour through a one-quarter inch choke, with tubing pressure 600 pounds and casing pressure 800 pounds. Bottom of the hole is 5,692 feet.

Polk County

In the western part of Polk County, Gulf Production Co. has made location for a wildcat test to be carried as No. 5 Trinity County Lumber Co., located 6,000 feet from the south line and 3,000 feet from the west line of the O. Peterson Survey. Across the line in Trinity County, the same company has made another location for its No. 1 Trinity County Lumber Co., located 4,500 feet west from the east line and 1,200 feet north of the south line of the J. M. Gomez Survey. The company holds considerable leases on the Trinity County Lumber Co. lands throughout the surrounding counties, and it is reported that the company has agreed to drill five tests on the acreage.

Matagorda County

On the Citrus Grove Prospect, western Matagorda County, Continental Oil Co. has made location for its second test. Its No. 1 Feife is located 3,000 feet east of the west line and 2,800 feet north of the south line of the J. S. Criswell Survey. The company's No. 1 Robbins was drilled the past year and was abandoned at 6,995 feet.

New Block in Fayette

Lewis Franklin has assembled a block of approximately 4,000 acres in Fayette County and will drill a test to the Cockfield sand. The block centers around the A. Thompson Survey, and location has been made for No. 1 V. Dybala, located in the center of a 75-acre lease in the A. Thompson Survey.

South and southwest of Clodine in Fort Bend County, J. S. Wheelis and C. H. Nelms are preparing to drill their block, and acreage spreads around the test are being sold for $50 per acre.

Deepest Active Wildcat

Texas Co.'s No. 1 Bayou St. Dennis, the deepest active wildcat test on the Gulf Coast, located in Jefferson Parish, Louisiana, has indicated production possibilities by encountering favorable showings of oil and gas at a depth below 9,541 feet. Sandy shale showing oil was cored from 9,531-33 feet and from 9,535-41 feet it encountered sand showing oil. Late in the week the operators were preparing to take another 6-foot core and will probably make some kind of a test during the week. Two cores which were

(Continued on Page 114)

Wildcat Operations on Gulf Coast

Week Ending April 27

RACCOON BEND—AUSTIN COUNTY

Humble O. & R. Co.'s No. 4 Reese, 150 ft. SW of most easterly NE line, 410 ft. NW of SE line, Wm. Smeathers Sur.
10¾-in. csg. 1,117 ft.; drlg. shale 1,552 ft.

Humble O. & R. Co.'s No. 8-X Diemar, 1,458 ft. from NW line, 357 ft. from SW line of Wm. Harvey Sur.
T.D. 4,185 ft.; P.B. 3,543 ft.; prepare to pump.

Humble O. & R. Co.'s No. 7-X Ollie Wilson, 932 ft. SE from No. 6-X, 250 ft. from NE line, Wm. Harvey Sur.
Cmtd. csg.; T.D. 4,182 ft.; P.B. 2,940 ft.; drilled to 3,140 ft.; 7-in. csg. 3,097 ft.

Humble O. & R. Co.'s No. 14-X Woodley, 354 ft. W from No. 8, 418 ft. from easterly NE line, 375 ft. from most easterly N cor. of lease.
T.D. 4,152 ft.; 7-in. csg. 4,115 ft.; prepare to install gas lift.

DANBURY—BRAZORIA COUNTY

Shell Pet. Corp.'s No. 3 Haury, 800 ft. SE of No. 2 in line with No. 2 and No. 1 Blakely-Winston, H.&T.B. Sur. No. 13.
Made est. 25,000,000 to 50,000,000 ft. gas daily; T.D. 7,168 ft.

DAMON MOUND—BRAZORIA COUNTY

Robert J. Cummins' No. 1 R. T. Mukahy heirs, 300 ft. SW line and 300 ft. from SE line of 100-ac. lease, A. Darst Creek Sur.
Drlg. shale 308 ft.

Esco's No. 1-D Wisdom, 25 ft. from S and W lines of Blk. D, Lot 5, A. Darst Sur.
T.D. 1,509 ft.; prepare to pump.

Intercoastal Oil Co.'s No. 13 Wisdom, 150 ft. from NW line and 10 ft. from SW line of Lot "D", Blk. No. 51.
Spudded.

HASTINGS—BRAZORIA COUNTY

Stanolind O. & G. Co.'s No. 1 Williams, 466 ft. N, 1,126 ft. from most easterly SW cor. of 81.3-ac. lease, A.C.H.&B. Sur. No. 1.
Location.

Stanolind O. & G. Co.'s No. 1 Grote, 460 ft. N and W of SE cor. of 71-ac. lease, A.C. H.&B. Sur.
Drlg. shale 1,510 ft.

Stanolind O. & G. Co.'s No. 1 Sneed, 495 ft. E along S line of Miller lease from SW cor. and 466 ft. S at R/A. A.C.H.&B. Sur. No. 2.
13⅜-in. csg. 1,322 ft.; drlg. shale 3,111 ft.

Stanolind O. & G. Co.'s No. 2 Sneed, 491.5 ft. E. and 1,590 ft. S from NW cor. of Gilbert Sneed 225-ac. lease, A.C.H.&B. Sur. No. 2.
Drlg. shale 1,210 ft.

Stanolind O. & G. Co.'s No. 2, J. W. Surface, 375 ft. S and 466 ft. W from easterly NE cor. of 75.9-ac. lease, A.C.H.&B. Sur. No. 2.
Drlg. shale 1,487 ft.

MANVEL—BRAZORIA COUNTY

Jay Simmons' No. 1 Still, located in center of W 5 acres of Lot No. 28, H.T.&B. Sur. No. 23.
Drlg. shale and lime 2,100 ft.

Harrison & Abercrombie's No. 1 Stevens et al, Center of W 5 acres, E of No. 4, A.C.H. &B. Sur. No. 91.
Spudded.

Commonwealth Oil Co.'s No. 1 Nichols, 150 ft. out of E cor. of Lot No. 2, H. N. Little Sur.
Drlg. shale 3,723 ft.

Texas Co.'s No. 2 Gulf Coast Home Co., 247 ft. S, 441 ft. W from NE cor. of Lot 88, H.T.&B. Sur. No. 2-B.
Rigging up.

Bowles & Borsodi's No. 2 Norvell Investment Co., C of Lot 57, H.&T.C. Sur.
T.D. 5,692 ft.; I.P. 22 bbls. per hr. through ¼-in. choke; tubing pressure 600 lbs.; csg. pressure 800 lbs.

J. W. Sorrells' No. 1 Swift, Blk. 21, Abst. 318, H. N. Little Sur.
Derrick.

Sterling O. & R. Co.'s No. 1 W. A. Gamble, 300 ft. from E line and center N and S of Lot 78, E. Little Sur.
T.D. 6,004 ft.; P.B. 3,300 ft.; tested S.W.; abd..; T.D. 4,124 ft.

Texas Co.'s No. 8-A Belcher, 330 ft. S, 47 deg. 59 ft. E and 265 ft. S 41 deg. 40 ft. W of NE cor. of lease, H. N. Little Sur.
Derrick.

Texas Co.'s No. 2 C. P. Dawson, 247.5 ft. S, 449.9 ft. W of NE cor. Lot No. 58, H. T.&B. Sur. No. 23.
16-in. csg. 47 ft.; drlg. shale and shells 1,155 ft.; T.D. 1,420 ft.; P.B. 1,146 ft.; 16-in. csg. 1,159 ft.

Texas Co.'s No. 14-B Belcher, 660 ft. S 42 deg. W from No. 9-B Belcher, H. N. Little Sur.
Location.

Texas Co.'s No. 1 O. W. Halligan, center of Lot 27, H.T.&B. Sur. No. 23.
Location.

Texas Co.'s No. 1 O. W. Halligan, center of Lot 26, H.T.&B. Sur. No. 23.
Location.

Texas Co.'s No. 3 O. L. Rash, 920 ft. S, 48 deg. E and 330 ft. S, 42 deg. W from N cor. of Lot No. 22, T. Spraggin Sur.
Location.

Texas Co.'s No. 2-A H. J. Wray, 330 ft. from N line and 990 ft. W of E line of lease.
Drlg. shale and lime 2,975 ft.

Texas Co.'s No. 4 A.R.G.G.H., 442 ft. W and 247.5 ft. S of NE cor. Lot 36, H.T.&B. Drlg. sand, shale and lime 4,016 ft.

Texas Co.'s No. 11-A Belcher, 990 ft. W and 330 ft. N of SE cor. of H. N. Little Sur.
Drlg. sand 5,640 ft.

Texas Co.'s No. 9 Houston Oil Field Assn., 363 ft. N of SW line and 330 ft. NW of SE line, Blk. 1, A.C.H.&B. Sur.
T.D. 4,011 ft.; 7-in. csg. 3,990 ft.; I.P. 148 bbls. on ¼-in. choke; tubing pressure 250 lbs.; csg. pressure, no gauge.

Texas Co.'s No. 1 C. P. Dawson, 2,475 ft. S, 441.9 ft. W of NE cor. of Lot 59, H.T.&B.

(Continued on Page 121)

Topeka Lime Yielding Big Production in Russell County Semiwildcat; 29 New Operations

By JAMES McINTYRE

Two outstanding features in Kansas Field development the past seven days was the unusual number of new wildcat tests started throughout the State and an unprecedented high rate of production from a lime horizon in Russell County that heretofore had been earmarked as questionable from a commercial standpoint, there being no record brought to this writer's attention of another case of a well producing in "gusher" style from the same horizon. The lime was found in Hartman & Blair's No. 1 Roebach, semiwildcat in the SE SE NW Section 2-14-15w, Russell County, one-half mile west of the same operators' No. 1 Sullivan, recent Kansas City-Lansing lime discovery, and 1¾ miles east of the Gorham Pool. Operators of the well had logged the Topeka lime at 2,780-96 feet, total depth, and the first oil came at 2,790 feet, flowing a solid stream through 8-inch pipe which occasionally threatened to reach the crown block of the derrick. After flowing in undulated fashion for 16 hours the well bridged with the tools still in the hole and production ceased. Estimates of the rate of production from the well range from 100 to 300 bbls. an hour. A good check on the production is the 3,000 bbls. of oil reported to have been caught in the pond during the 16-hour period it flowed unabated and out of control. Some skepticism is attached to the possibility that the Topeka lime is the source of such a large amount of oil, and a few field men have ventured a guess that the oil has migrated from the Kansas City-Lansing member to the Topeka lime coming via a crevice. Others state that possibly an eroded condition exists and that the production is actually coming from the Kansas City-Lansing. Another theory, advanced by those closely connected with the well, is that it is producing from a gas sand above the Topeka. Late reports from the well state that tools are stuck fast and so far efforts to budge them have been of no avail.

Location had been staked by Hartman and Blair for No. 2 Roebuck in the SE NE NW Section 2-14-15w, two locations north of No. 1 Roebuck, and cellar and ponds were being dug.

Following is a summary by counties showing new operations in the State for the past week:

County—	New operations	New wildcats
Barton	2	1
Butler	4	1
Chase	1	0
Ellis	2	2
Ellsworth	2	0
Greenwood	2	1
Harvey	2	0
McPherson	2	0
Rice	2	0
Rush	1	1
Russell	4	1
Scott	1	0
Stafford	1	1
Sedgwick	1	0
Woodson	2	1
Total	29	9

The above tabulation shows that nine new wildcat tests were started during the week just past, this being the greatest number of wildcat starts in the State for many weeks.

Ellsworth County

Pryor and Lockhart and others' No. 1 Gregory, SE cor. Section 19-16-8w, central Ellsworth County wildcat, about 8 miles northeast of the Stratman Pool, was dry and abandoned in the Siliceous lime, encountering a hole full of water in the lime from 3,384-86 feet, total depth.

Empire Oil & Refining Co.'s No. 1 Rolfs, SE NE Section 14-17-9w, Lorraine Pool in Ellsworth County, got a hole full of oil from Siliceous lime 3,189½-95 feet, total depth, but no test of production had been conducted.

South of the Lorraine Pool in Ellsworth County, offsetting the No. 1 Teubner, Siliceous lime discovery by the Carter Oil Co. and associates, same operators were building rig in the SW NE Section 26-17-9w for No. 1 Williams and rig was being built by some operators for their No. 1 Ogden in the NE SW Section 26-17-9w, another offset to the No. 1 Teubner.

Russell County

Hartman and Blair encountered a hole full of water from Siliceous lime 3,429-52 feet, total depth, in their No. 1 Hildebrandt, NW NE SW Section 12-14-14w, Russell County, southeast of the Russell Pool, and it was abandoned.

In the Sellens Pool of Russell County, Sinclair Prairie Oil & Gas Co. was swabbing 30 bbls. of fluid per day from its No. 1 S. J. Sellens, NE cor. Section 35-15-13w, after deepening it from 2965 feet to the Oswald lime. Top Oswald was 3,048 feet, 6-inch casing set at 3,063 feet, and total depth is 3,101 feet.

Material was being moved in for Kasishke, Inc., and others' No. 1 Berrick, SW SE NE Section 23-15-13w, Sellens Pool in Russell County.

Stanolind Oil & Gas Co.'s No. 31 Baxter, SW SE Section 32-13-15w, Gorham Pool in Russell County, was swabbing 60 bbls. of oil and 48 bbls. of water in 48 hours from the Kansas City-Lansing lime logged at 3,055-3,101 feet, total depth.

Palmer Oil Corp.'s No. 4 Borrell, C E half E half SE Section 21-13-14w, Russell Pool of Russell County, filled 200 feet with oil in 15 minutes from the Siliceous lime, the pay coming from 3,275-76 feet, total depth.

Southeast of the Dillner Pool and northeast of the Neidenthal Pool in Russell County, Jones, Kirk and Wakefield's No. 1 Millberger, NE NW NW Section 7-14-14w, was reaming 5-inch pipe to set it on top of the Siliceous lime from which oil rose 2,000 feet in 10 hours. Siliceous lime was logged from 3,305 to 3,315 feet, and first pay was had at 3,309 feet.

Aylward and others were rigging up their No. 4 Mills in the NW SW NE Section 4-14-15w, Gorham Pool in Russell County.

Midway between the Fairport and North Fairport Pools in western Russell County, Pryor and Lockhart was moving in material for their No. 1 Spicer, NE SE Section 21-11-15w, a wildcat test.

Saline County

Dieter and others had tested the Siliceous lime at 3,233-3,289 feet, total depth, in their No. 1 Herrington, NE NW SE Section 3-13-1w, about 11 miles northeast of Salina in Saline County, and finding it to be dry, the test was abandoned.

Rush County

Eldorado Refining Co. was building rig in the SE NW Section 36-1-17w, eastern Rush County, for No. 1 Stang.

Kansas Production

Estimated daily average production of Kansas for the week ended April 27 and for the preceding week follows:

	Barrels	
	Apr. 27	Apr. 20
Haury-Burrton	20,650	21,850
Ritz-Canton	10,925	9,350
Hollow	7,975	4,925
Voshell	4,625	5,000
Johnson	1,472	1,503
Nikkell	4,825	4,950
Sedgwick County	8,633	8,421
Ellsworth County	3,983	5,121
Barton County	959	1,643
Rice County	18,657	20,872
Ellis County	479	706
Kingman County	1,104	1,017
Stafford County	1,702	2,084
Russell County	13,000	13,225
Greenwood County	11,000	11,000
Butler County	18,750	18,750
Other pools	17,285	16,096
Total Kansas	146,025	146,523

Barton County

Darby Petroleum Co.'s No. 2 Jarus, SW NW NE Section 16-16-12w, Beaver Pool in Barton County, potentialed 926 bbls. of oil in 24 hours from the Gorham sand topped at 3,335 feet. Pay was coming from 3,335-41 feet, total depth.

Downing and others encountered 7,500,000 feet of gas in the Kansas City-Lansing lime at 3,052-58 feet and were drilling ahead at 3,100 feet.

Wolf Creek Oil Co.'s No. 1 Kraft, wildcat in northeastern Barton County, about 4 miles west of the Stoltenberg Pool, and located in the SW cor. Section 26-16-11w, topped Siliceous lime at 3,385 feet, encountered a show of oil at 3,396 feet, and 6-inch casing was to be lowered preparatory to drilling in.

Darby Petroleum Co. was moving in material for No. 1 Kultgen, SE NE NW Section 16-16-12w, Beaver Pool in Barton County.

In eastern Barton County near the Straub Pool, Torry, Feaster and others had made location for No. 1 Feist, a wild-

Wildcat Operations in Kansas

Week Ending April 27

(Descriptions are East unless marked otherwise)

BARBER COUNTY

Sam Jarvis et al's No. 1 Morrisse, C SE NE Sec. 23-30-10w.
Rig.

Southern Drlg. Co. et al's No. 1 Davis, 330 ft. from W and 330 ft. from S lines of NE Sec. 13-34-15w.
S.D. 2,865 ft.

L. H. Wentz' No. 1 Skinner, SE NW NW NE Sec. 29-31-14w.
Rig.

BARTON COUNTY

D. I. Hall et al's No. 1 Arnold, SE SE SW Sec. 19-18-15w.
Moving in tools.

Lario O. & G. Co. et al's No. 1 Nuss, NW SW SW Sec. 11-16-14w.
Drlg. 1,330 ft.

Lario O. & G. Co. et al's No. 1 Nuss, NW SW NW Sec. 11-16-14w.
Drlg. 910 ft.

McMorrow & Spencer's No. 1 Hagen, NE cor. Sec. 33-20-11w.
Conglomerate 3,375 ft.; S.D. 3,495 ft.

C. L. Price et al's No. 1 Ehrlich, NW SE Sec. 10-16-13w.
T.D. 360 ft.; fishing.

Pryor & Lockhart's No. 1 Herrington, NE NW Sec. 6-16-12w.
Rig.

Suppes & Witt's No. 1 Hayes, SW cor. Sec. 7-16-15w.
Rig.

Torry-Feaster et al's No. 1 Feist, NE SE Sec. 29-18-11w.
Location.

Wolf Creek Oil Co.'s No. 1 Kraft, SW cor. Sec. 26-16-11w.
K.C. lime 3,090 ft.; drlg. 3,250 ft.

BUTLER COUNTY

Ward McGinnis' No. 1 Jackson, SW NE Sec. 26-25-8.
Rigging up.

CLAY COUNTY

Seidel Bros.' No. 1 Younken, C S½ SE NW Sec. 21-9-4.
Mississippi 1,772-81 ft.; est. 25 bbls. oil and some wtr.; now 5 bbls. oil and 10 bbls. of wtr.

COWLEY COUNTY

Baden, Johnson, Roth & Farrout's No. 1 David, NE SW Sec. 35-30-4.
Moving in materials.

Lloyd, Frost & Study's No. 1 Weathered, SW SE SE Sec. 28-31-3.
Stalnaker sand 2,075 ft.; est. 24 bbls. dly. from 2,087-89 ft.

A. McCoy's No. 1 Brandenburg, SW SE SE Sec. 17-34-5.
S.D. 2,275 ft. for csg.

ELLIS COUNTY

Tom Palmer and Storm King Oil Co.'s No. 1 Ruder, SE NE NW Sec. 17-15-18w.
Cellar.

Stanolind O. & G. Co.'s No. 1 Penney-Wann, NW SW SE Sec. 12-15-20w.
Moving in material.

ELLSWORTH COUNTY

Lario O. & G. Co. et al's No. 1 Central National Bank, SE NW Sec. 33-15-8w.
Spud.

Lario O. & G. Co.'s No. 1 Wright, SW SW NE Sec. 17-16-8w.
Drlg. 3,210 ft.

Lario O. & G. Co.'s No. 1 State, SW cor. Sec. 29-15-8w.
K.C. lime 2,590 ft.; H.F.W. 2,695-2,720 ft.; U.R. 8-in. csg. 2,750 ft., T.D.

Pryor & Lockhart's No. 1 Gregory, SE SE SE Sec. 19-16-8w.
Siliceous lime 3,384-86 ft., T.D.; dry and abd.

Western Exploration Co.'s No. 1 Wilkins, NW SW NW Sec. 9-17-9w.
Rigging up.

GREENWOOD COUNTY

Mullendore et al's No. 1 Pedroje, NE SW Sec. 14-23-11.
Drlg. 400 ft.

HARVEY COUNTY

Cameron, Derby Oil Co. and Trees' No. 1 Brainard, SW SE NW Sec. 19-24-2.
Drlg. 1,790 ft.

Goering Bros.' No. 1 Brainard, NE SW Sec. 3-23-2w.
Drlg. 135 ft.

Hartman & Blair et al's No. 1 Redinger, NW cor. Sec. 15-24-3w.
Cellar.

D. R. Lauck et al's No. 1 Baller, SW cor. Sec. 29-24-1.
Drlg. 630 ft.

L. W. Prunty et al's No. 1 Davis, NE cor. Sec. 6-22-1w.
Chat 2,922 ft.; drlg. 2,928 ft.

Twin Drlg. Co. et al's (O. J. Connell), No. 1 Roth, SW cor. Sec. 16-22-2w.
H.F.W. 2,370-85 ft.; U.R. 8-in. csg. at 2,400 ft.

Wenzel et al's No. 1 Schrag, NW SE Sec. 24-22-3w.
T.D. 587 ft.; S.D. for csg.

Winkler Koch et al's No. 1 Mueller, SE SW NW Sec. 15-23-2w.
Spudding.

McPHERSON COUNTY

Brosius et al's No. 1 Hanson, NE NE SW Sec. 15-17-2w.
T.D. 1,108 ft.; S.D.

Carey & Miller's No. 1 Husband, SE SE NW Sec. 6-19-3w.
Moving in material.

Lario O. & G. Co.'s No. 1 Base, SW cor. Sec. 22-20-2w.
Wilcox 3,495 ft.; H.F.W. 3,505-10 ft.; Siliceous lime 3,556-76 ft., T.D.; dry and abd.

W. C. McBride's No. 1 Mugler, SE SW SW Sec. 32-20-3w.
K.C. lime 2,430 ft.; H.F.W. 2,556 ft.; C.O. at 2,866 ft.

Palmer Oil Corp.'s No. 1 Swenson, NE NE SW Sec. 11-18-3w.
Drlg. 3,018 ft.

Shell Pet. Corp.'s No. 1 Wenger, NE cor. Sec. 2-20-1w.
Viola 3,356-64 ft., T.D.; swbd. 255 bbls. in 10 hrs.; 50% wtr.

Stafford et al's No. 1 Krehbiel, NW NW SE Sec. 27-21-3w; (O.W.D.D.).
C.O. at 2,080 ft. and S.D.

NESS COUNTY

Philips Pet. Co.'s No. 1 Young, C NW SW Sec. 13-18-21w.
K.C. lime 3,640 ft.; T.D. 3,649 ft.; R.U. cable tools.

OSAGE COUNTY

Jim Edwards' No. 1 Detrick, C NW SE Sec. 21-14-15.
Show oil and gas 783-800 ft.; enlarging hole.

PAWNEE COUNTY

Atlantic Oil Prod. Co.'s No. 1 Siepake, C NE NE Sec. 15-22s-17w.
Drlg. 3,500 ft.

RENO COUNTY

Bradley's No. 1 Olmsted, SW SW SW Sec. 32-22-7w.
Moving in material.

Foraker et al's No. 1 Hiett, SE SW NE Sec. 34-24-4w.
T.D. 1,285 ft.; S.D.

Gypsy Oil Co.'s No. 1 Tonn, SW NW SE Sec. 16-25-4w.
Rig.

L. A. Mylius et al's No. 1 Sprowl, NE NW NE Sec. 1-24-5w.
Rig.

Privett Drlg. Co.'s No. 1 Crotts, NE NW NE Sec. 27-26-10w.

(Continued on Next Page)

cat located in the NE SE Section 29-18-11w.

Scott County

In the Shallow Water Pool of southern Scott County in far western Kansas, Atlantic Oil Producing Co. was building rig for No. 1 Dague, C SW NW Section 14-20-33w, offsetting to the east the No. 1 Vaniman, Mississippi lime discovery of last January by the same company which made 572 bbls. of oil on its completed gauge.

Atlantic Oil Producing Co. was drilling at 1,550 feet in its No. 1 Mark "A," C SE SE Section 28-20-33w, 12 miles southwest of the No. 1 Vaniman discovery, in Scott County.

Stafford County

Lario Oil & Gas Co. and others' No. 1 Tudormorgan, SE NW Section 23-24-13w, Stafford County wildcat discovery in the Kansas City lime logged at 3,507 to 3,600 feet, total depth, with pay coming from 3,597 feet, pumped 242 bbls. of oil in 24 hours after it had been acidized with 1,500 gallons. Oil tested 33 gravity.

In eastern Stafford County, north of the Richardson Pool about 3 miles, C. B. Davis and others were rigging up rotary tools for No. 1 Riley in the SE cor. Section 19-22-11w.

Ellis County

Stanolind Oil & Gas Co. was moving in material for a wildcat test in the NW SW SE Section 12-15-20w, in Ellis County, about 14 miles southwest of Hays, on seismographed acreage. The nearest production is the Yocemento Pool and the test will be known as No. 1 Penney-Wann.

Another Ellis County wildcat venture was started by Palmer Oil Corp. and Storm King Oil Co. in the SE NE NW Section 17-15-18w, about 9 miles south of Hays. Cellar had been dug.

McPherson County

In the Chindberg Pool in McPherson County, Roth and Farrout had completed their No. 4 Swanson, SW NE Section 13-19-3w, the well flowing 373 bbls. of oil with a show of water and 500,000 feet of gas from the chat at 2,940-3,008 feet, total depth, after that formation had been acidized with 1,000 gallons.

Lario Oil & Gas Co. and others' wildcat, No. 1 Base, SW cor. Section 22-20-2w, McPherson County, encountered a hole full of water in the Siliceous lime at 3,556-3,576 feet, total depth, and the test was abandoned.

Shell Petroleum Corp.'s Viola lime discovery, No. 1 Wenger, NE cor. Section 2-20-1w, in McPherson County, east of the Ritz-Canton Pool, was reported as having swabbed 225 bbls. of oil in 10 hours after which time it was shut in for 46 hours, and upon being opened up the bailer was run into the hole revealing 1,600 feet of fluid, 800 feet of oil and 800 feet of water. Oil tests 26 gravity. Viola lime record is 3,356-64 feet, total depth.

Dickey Oil Co.'s No. 2 Tull, SE NE SW Section 13-19-3w, Chindberg Pool in McPherson County, topped Chat at 2,955 feet, got first gas showing at 2,957 feet, and at 2,976 feet was showing for 30,000,000 feet of dry gas with no oil showing. It was to be deepened.

Palmer Oil Corp.'s No. 1 Swenson, wildcat in McPherson County in the NE SE Section 11-18-3w, had Kansas City lime at 2,370 feet and after shutting off several water zones with the 8-inch casing at 2,772 feet, was drilling ahead at 3,075 feet with the hole caving.

New operations in McPherson County for the week were: Dickey Oil Co.'s No. 1 Rolander, NW NE SW Section 30-18-2w, cellar; Youker and others' No. 1 Rolander, SE NE SE Section 25-18-3w, moving in material.

Harvey County

H. H. & S. Oil Co. had abandoned location for No. 1 Frizzell, NE SE Section 31-23-2w, about 8 miles east of the Burrton Pool.

New operations in Harvey County during the past week were: Marathon Oil Co.'s No. 5 Duerksen, SW NE Section 19-22-3w, rigging up to deepen from 3,436 feet; same company's No. 3 Duerksen, SE SW NE Section 19-22-3w, old total depth 3,454 feet, deepened to 3,475 feet and standing acidized with 1,000 gallons.

Sedgwick County

In the Robbins Pool of Sedgwick County, Magnolia Petroleum Co. had completed No. 7 Robbins, NE NW SE Section 20-28-1, in Chat formation from 3,085-3,108 feet, total depth, for 267 bbls. of oil in 24 hours, with 100 bbls. of water, after treating that zone with 1,000 gallons of acid. It was swabbing 4½ bbls. per hour before acid treatment.

In the same pool, Kilgore and Hansen's No. 1 Yaw, SW NE Section 20-28-1, Sedgwick County, found Chat 3,089-3,113 feet, total depth, good for 189 bbls. of oil in 24 hours after treating it with 1,000 gallons of acid. It was completed.

E. B. Shawver's No. 5 Russell, SW SE Section 17-28-1, Robbins Pool in Sedgwick County, had Chat at 3,071-3,120 feet, total depth, which put 150 feet of oil in the hole natural. It was treated with 1,000 gallons of acid but was not helped. It was again treated with 1,000 gallons of acid and this second application yielded 137 bbls. of oil in 24 hours on the pump for its completed gauge.

The only new operation in Sedgwick County for the week was Cromwell and Lewis' No. 1 Schaer, SE SW SE Section 10-26-2, which was building rig.

Butler County

Southeast of Eldorado in Butler County, Saco Oil Co. had abandoned location for its No. 1-A McGinnis, NE SE NE Section 9-27-6.

Marathon Oil Co. had location staked for its No. 25 Blood, 660 feet south and 1,160 feet west of the center of Section 21-28-4, Butler County.

Buffington and Hodge were rigging up machine in the NW SE Section 9-29-4, Butler County, for their No. 1-A Harter.

Bennett and Ables were rigging up at their No. 1 Lang, NE SE Section 2-25-3, Butler County.

About 1½ miles west of the old Sallyard Pool in Butler County, and surrounded by dry holes, Ward McGinnis was rigging up his No. 1 Jackson test, SW NE Section 26-25-8.

Rice County

Gypsy Oil Co. in its No. 5 Malone, NE SE NW Section 18-20-9w, Sharpe Pool in Rice County, found the Siliceous lime at 3,295-3,307 feet, total depth, good for 1,489 bbls. of oil on its 24-hour potential test.

In the Grove Pool in Rice County, Empire Oil & Refining Co.'s No. 4 Grove, NW SW NE Section 29-19-9w, got 1,500 feet of oil in the hole from Siliceous lime at 3,209-30 feet, total depth. It was then acidized with 1,000 gallons and on its 24-hour potential test pumped 1,334 bbls. of oil.

Empire Oil & Refining Co. completed its No. 3 Grove, SE SW NE 29-19-9w, Grove Pool in Rice County, for 1,365 bbls. of oil first 24 hours on the pump. Siliceous lime at 3,203-3,240 feet, total depth, was the source of production and it had been given a shot of acid.

In the same area, Sinclair Prairie Oil & Gas Co. found the Siliceous lime from 3,201-3,245 feet, total depth, in its No. 6 Vilkland, NW SE SE Section 20-19-9w, good for 1,205 bbls. of oil the first 24 hours on the pump on its potential gauge.

Ira Keith and others had recompleted their No. 1 Vilkland, SE NE SE Section 20-19-9w, Grove Pool in Rice County, pumping 1,043 bbls. of oil in 22¾ hours from Siliceous lime at 3,206-3,242 feet, total depth. This test was formerly bottomed at 3,225 feet in Siliceous lime before it was deepened.

In the Steckel Pool, Western Rice County, Gypsy Oil Co.'s No. 2 F. Steckel, C W half SE NW Section 31-19-10, found Siliceous lime 3,288-3,308 feet, total depth, good for 1,433 bbls. of oil in 24 hours on the pump, for its completed gauge.

Gypsy Oil Co. had rotary rig up for its No. 2 Malone, NW SW NE Section 18-20-9w, Sharpe Pool in Rice County.

In the Beyers Pool in Rice County, north of Chase, National Refining Co. had a machine in on location for its No. 5 Sherman, SW SE SW Section 16-19-9w, a twin well.

Allison and Fitzwilliams and others' No. 1 Stumps, wildcat test in the NW SW Section 4-18-10w, north of the Orth Pool in northwestern Rice County, had an estimated 50 bbls. of oil per day from Siliceous lime at 3,229 to 3,261 feet. It was then deepened to 3,267 feet, total depth, and oil increased to 8 bbls. hourly.

In the Chase Townsite Pool in Rice County, Gypsy Oil Co.'s No. 8 Christopher, NW NE Section 6-20-9w, had Siliceous lime from 3,240 to 3,245 feet, total depth, which put 2,600 feet of fluid in the hole in 10 hours, showing three bailers of water per hour. It had been plugged back to 3,243½ feet, but no test of production made.

Foraker and Nickerson and others' No. 1 Lyon, wildcat test in the SE NW Section 27-20-8w, Rice County, south of Lyons, logged Simpson formation at 3,485 feet, a hole full of water at 3,500 to 3,511 feet, and was drilling ahead at 3,575 feet looking for the Siliceous lime.

Elk County

Clay Petroleum Co.'s No. 1-A Shambaugh, C NE SE Section 20-28-9, in northwestern Elk County, was dry and abandoned at 2,870 feet, total depth. This test went to the Siliceous lime, topped at 2,852 feet, encountered a show of oil at 2,860 feet and then a hole full of water at 2,870 feet.

Reno County

Reno County completions were all in the Haury-Burrton Pool the past week. Derby Oil Co.'s No. 5 Ackley, NW SW SE Section 14-23-4w, was abandoned at 520 feet, due to the discouraging water condition in nearby wells.

In the south end of the Haury-Burrton Field in Reno County, Deal Oil & Gas Co. and others had abandoned location for their No. 5 McElwain, NW SE SE Section 34-23-4w.

In the Haury-Burrton Pool in Reno County, Barnsdall Oil Corp.'s No. 2-A Sabin, NE SE NW Section 11-23-4w, had Hunton lime from 3,609 to 3,622½ feet, total depth, where it swabbed 97 bbls. of oil and 31 bbls. of water in eight hours. It is to be acidized.

Barnsdall Oil Corp.'s No. 9-B Sabin, NW SE NE Section 11-23-4w, Burrton-Haury sector of Reno County, pumped 619 bbls. of oil in 24 hours from Hunton lime at 3,580-84 feet, total depth. It was then acidized with 1,000 gallons and shut in.

Barnsdall Oil Corp.'s No. 2 Baughman, SE SW NE Section 34-23-4w, Burrton-Haury Pool in Reno County, was a failure in the Hunton lime at 3,608-3,690 feet, total depth, getting a hole full of water at that depth. It had been plugged back and the 7-inch casing perforated at 3,370-80 feet and at 3,555 feet, where it pumped 209 bbls. of oil in 13½ hours with a show of water.

Sinclair Prairie Oil & Gas Co.'s No. 4 Harner, NE SE SW Section 14-23-4w, Burrton-Haury Pool in Reno County, logged Wilcox sand at 3,727 feet, a hole full of water from 3,738 to 3,745 feet, base of Wilcox sand at 3,792 feet, and had found top of the Siliceous lime at 3,815½ feet.

Olson Drilling Co. and Shell Petroleum Corp. found Hunton lime at 3,594-3,604 feet, total depth, good for 2,101 bbls. of oil in 24 hours on the pump on its completed gauge.

(Continued on Page 109)

Kansas Wildcats

(Continued from Preceding Page)

Viola 4,240 ft.; wtr.; Simpson (corrected) 4,325 ft.; fishing 4,338 ft.

RICE COUNTY

Allison & Fitzwilliams et al's No. 1 Stumps, NW NW SW Sec. 4-18-10w.
Siliceous lime 3,299-61 ft., T.D.; pumped 2 bbls. oil per hr.

Day et al's No. 1 Mason, NW NE NE Sec. 28-21-7w.
Drlg. 2,000 ft.

Foraker, Nickerson et al's No. 1 Lyons, SE NW Sec. 27-20-8w.
Simpson 3,485 ft.; H.F.W. 3,500-11 ft.; drlg. 3,560 ft.

Fred Rust et al's No. 1 Brown, NE cor. Sec. 16-21-6w.
Rig.

Vickers Pet. Co. et al's No. 1 Gouldner, SE NE NW Sec. 16-18-9w.
U.R. 10-in. csg. 1,999 ft.

ROOKS COUNTY

Smith & Ash's (Carman & Hershey) No. 1 Nelson, NW NW NE Sec. 27-10-16w.
S.D. at 50 ft.

Stearns & Streeter's No. 1 Hoskins, SE SW SE Sec. 34-9-16w.
Oswald 3,084-3,106 ft.; acidized; pumped 120 bbls. oil; H.F.W. 3,452-54 ft.; 5-in. csg. 3,446 ft.; drlg. 3,525 ft.

Trees Oil Co. and Findeiss' No. 1 Johnson, SW SW SE Sec. 26-10-19w.
Drlg. 525 ft.

RUSH COUNTY

P. Boyle et al's No. 1 Yost, C SW SW Sec. 28-17-18w.
Fishing at 335 ft.

Eldorado Ref. Co.'s No. 1 Stang, SE NW Sec. 36-17-17w.
Bldg. rig.

Lario O. & G. Co. and Phillips Pet. Co.'s No. 1 Benbow, NW NE NE Sec. 12-17-19w.
T.D. 3,790 ft.; fishing.

Morgan & Flynn's No. 1 Schlegel, SE SE NW Sec. 26-17-16w.
Drlg. 2,690 ft.

RUSSELL COUNTY

J. Brouk and R. D. Bailey's No. 1 Kleusner, NW SE Sec. 34-15-12w.
Rigged up.

Hartman & Blair's No. 1 Hildebrandt, NW NE SW Sec. 13-14-14w.
Oswald 2,925-75 ft.; show oil; Siliceous lime 3,249-52 ft., T.D.; H.F.W.; dry and abd.

Murphin et al's No. 1 Funk, SW cor. Sec. 19-12-13w.
Fishing at 3,040 ft.

Pryor and Lockhart's No. 1 Spicer, NE SE Sec. 21-11-15w.
Moving in material.

Ryan Pet. Co.'s No. 1 Newbold, NW SE NE Sec. 25-12-15w.
U.R. 8-in. csg. at 2,390 ft.

Vernon & Murphin's No. 1 Becker, NE cor. Sec. 32-15-13w.
Rigging up.

Wakefield & Armer's No. 1 Hall, NE SE SW Sec. 36-14-15w.
S.D. at 560 ft.

Winkler & Koch's No. 1 Herman, SE NW Sec. 27-12-15w.
Spud and S.D.

Wolf Creek Oil Co. et al's No. 1 Penn Mutual, SW cor. Sec. 22-15-15w.
Drlg. 1,980 ft.

SALINE COUNTY

Dieter et al's No. 1 Herrington, NE NW SE Sec. 3-13-1w.
Siliceous lime 3,233 ft.; T.D. 3,289 ft.; dry and abd.

SEDGWICK COUNTY

Allison & Fitzwilliams et al's No. 1 Etruthers, NE SW Sec. 34-28-2w.
H.F.W. 3,176-87 ft.; T.D. 3,295 ft.; fishing.

Magnolia Pet. Co.'s No. 1 Bartholomew, SE SE SW Sec. 30-27-4w.
Chat 3,682 ft.; 9-in. 3,692 ft.; standardizing.

Western Kansas O. & R. Co.'s No. 1 Betzen, SE NE Sec. 17-26-3w.
K.C. lime 2,823 ft.; drlg. 3,160 ft.

SCOTT COUNTY

Atlantic Oil Prod. Co.'s No. 1 Mark "A," C SE SE Sec. 28-20-33w.
Drlg. 1,550 ft.

STAFFORD COUNTY

C. B. Davis et al's No. 1 Riley, SE cor. Sec. 19-22-11w.
Rigging up rotary.

Lario O. & G. Co.'s No. 1 Tudormorgan, SE SE NW Sec. 23-24-13w.
Pumped 65 bbls. oil in 24 hrs.; acidized and pumped 342 bbls. in 24 hrs.

SUMNER COUNTY

Allison & Fitzwilliams et al's No. 1-B Hitchcock, SE NW Sec. 16-30-1w.
Location.

Shell Pet. Corp.'s No. 1 Green, SE SW NW Sec. 3-33-2.
Layton 2,657 ft.; K.C. lime 2,735 ft.; drlg. 2,759 ft.; H.F.W.

Wakefield et al's No. 1 Newton, SE cor. Sec. 21-30-2.
Rig.

D. J. Wilson et al's No. 1 Clark, 1,320 ft. from W and 25 ft. from S line of NW Sec. 15-35-1w.
Rigging up.

TREGO COUNTY

Central Commercial's No. 1 Wagg, NW NW SE Sec. 17-13-21w.
T.D. 1,600 ft.; fishing.

Hansa & Lauck and Olson Drlg. Co.'s No. 1 Lang, SE SE NW Sec. 1-14-21w.
Rig.

Jenmar Oil Co.'s No. 1 Jones, SE cor. Sec. 20-12-23w.
Oswald lime 3,790 ft.; T.D. 3,890 ft.; small show oil and ⅛ bbl. wtr. per hr.; S.D.

WOODSON COUNTY

Foster and Schultz's No. 1 Ferguson, C S½ NE SW Sec. 12-26-13.
Drlg. 1,200 ft.

Kite et al's No. 1 Gorman, NE NW Sec. 18-25-14e.
Mississippi lime 1,576 ft.; T.D. 1,603 ft.; wtr.; D.&A.

Milham Opens Wells in Buttonwillow Gas Field; Big Well Extends Playa Del Rey Eastward

By L. P. STOCKMAN
Staff Correspondent, California Fields

LOS ANGELES, Calif., Apr. 29.—Reflecting the results of an order of the petroleum administrator which reallocated oil and gas production in the Kettleman North Dome Field, the Milham Exploration Co. opened 10 wells in the Buttonwillow gas field of Kern County this week and will probably resume production in additional wells in the near future. Milham is making a delivery of only 15,000,000 feet of gas per day to the Pacific Gas & Electric Co. at present but this will be stepped up in the near future as this new supply is being fed out slowly as it is necessary to blend this dry gas with oil gas so that the B.t.u. value will not be substantially changed. Buttonwillow gas runs around 1,000 B.t.u. while gas from Kettleman Hills, which has furnished most of the requirements to date, averages about 1,150 B.t.u. The gas being delivered to the Pacific Gas & Electric Co. is being transmitted to the San Francisco bay region for domestic consumption.

Disregarding financial interests involved, the petroleum administrator's order has been received with considerable favor as many operators have long taken the position that the abundant supply of natural gas at Kettleman Hills should not be sacrificed merely to supply a demand that could be met from other sources. Ed Pauley, president of the Petrol Corp., has taken a prominent part in the attempt to curb what he has termed an uneconomic production of natural gas in the North Dome. Mr. Pauley has consistently maintained that this market should be allocated over the state and oil used to manufacture gas if necessary. This position was recently reiterated by Mr. Pauley and a careful survey indicates that many of the chief executives share the same belief. It is rather hard on the Milham Exploration Co. because many have strongly adhered to the belief that this company should be given every consideration due to its successful exploration work in both Kettleman North Dome and Buttonwillow. The Milham interests finished the first commercial producer in each of these fields and in doing so discovered two of the most important fields in the state. There is no doubt about the North Dome but the Buttonwillow gas field is still somewhat of an unknown factor as the company has kept it shut in due to conservation measures. Milham is still of the opinion that Buttonwillow will become an important factor from an economic standpoint and those wildcatters who have gone through the mill are hoping that this expectation will be fulfilled as they realize that a successful prospector is entitled to every possible break.

Reduced Production

The industry as a whole apparently does not fully recognize the import of the petroleum administrator's recent order as the primary and basic principles are too complex to understand without considerable study. What should interest all producers, however, is the provision that wells showing high gas-oil ratios must be shut in or reduced to conform with the field average. This does not seem like much on the surface but the result will be far reaching. For instance it means that approximately half of the natural gas production of the North Dome must be eliminated or brought within the prescribed limits. This still does not mean much to the average producer but the result of this operation will make a rather firm imprint because if the production of wet gas is reduced it will obviously severely reduce the production of natural gasoline. The importance of this is evident when one considers the fact that this field has been producing about 380,000,000 feet of gas per day and that under the new orders this must be cut to approximately 200,000,000 feet per day. This is where the producer of heavy crude oil fits in unless some of the other fields make up the deficit.

Reduction of the permissible production of natural gas in the North Dome may exert an important influence in the market for natural gasoline which has been down around bottom for several weeks due to the expiration of some rather large purchase contracts. These contracts recently expired and were not renewed with the result that casinghead prices have shown a very perceptible softening. These prices may move up to higher levels now that Kettleman Hills has been eased off. For the past two years, natural gasoline prices have been relatively high due to the existence of high priced contracts with natural gasoline manufacturers in the North Dome but this condition has been corrected. It is likely, however, that reduced production of natural gas and consequent lower production of casinghead may result in the same condition.

Wells Opened Up

The opening of wells in the Buttonwillow gas field this week marks the first time that this field has gone on commercial gas production as these wells were shut in immediately after completion. The Milham Exploration Co. was granted the option of fulfilling its contractual obligations with the Pacific Gas & Electric Co. by delivering natural gas from the North Dome in lieu of which Milham agreed to keep Buttonwillow shut in. This was a stipulation agreed to by signatories of the Kettleman unit plan which provided that Milham would be entitled to sufficient gas free of cost to meet contractual obligations. The order of the petroleum administrator, which in effect practically shuts in wells completed in the Elliott gas zone due to their high gas-oil ratio, means that Milham must meet some of its requirements by producing dry gas at Buttonwillow. This order has the effect of terminating Milham's contract with Kenda which provided for the delivery of dry gas in sufficient quantities to meet its commitments.

Two separate productive horizons have been proved up in the Kettleman North Dome Field and for this reason the gas-oil ratio of wells shows a wide variation. In the Ochsner or black oil zone, the ratio is rather low but in the upper or Elliott gas zone the ratio is exceptionally high running in some instances to as high as 50,000 feet of gas to each barrel of crude oil produced. The crude produced from the Elliott gas zone is more of a condensate than a normal crude, both with respect to gravity and color. The forced reduction of natural gas production should have the effect of substantially increasing the ultimate recovery of crude oil because this gas, if prevented from being disposed of, will be available for subsequent repressuring operations.

Buttonwillow

Three productive gas zones have been proved up in the Buttonwillow gas field and all wells show pressures averaging around 1,400 pounds. Up to the present, 27 gas wells have been completed in this field, all but two of which were finished by the Milham interests. These two wells were completed by the General Petroleum Corp. on the Morris lease in Section 8-28-23. Milham has completed 16 gas wells for its own account on the Kern County Land Co. property and an additional nine on property owned in fee by Southern Pacific Land Co. Very little work has been undertaken in the Buttonwillow gas field during the past two years as there has been no incentive to do any work in as much as wells could not be produced upon completion.

The Buttonwillow gas field has a rated capacity of approximately 200,000,000 feet per day and its true potential should become known within another month or two as additional wells are opened. The new order of the petroleum administrator may ultimately prove to be a very favorable decision because it will definitely establish the potential of Buttonwillow gas field and enable the Milham to evaluate its holdings. It has been customary to bleed these gas wells at Buttonwillow at frequent intervals during the past several years in order to keep the holes clean and free from debris. As a rule, the company has followed this plan about once each month. In contrast with the usual method of completing oil wells, these gas wells at Buttonwillow are blown into production after drilling operations are concluded by introducing gas down between the casing and tubing with the tubing open. This cleans out the hole and stimulates the flow of gas. The wells are allowed to flow until they build up and are then shut in. This eliminates swabbing operations and greatly simplifies work.

Other Gas Fields

The future productive status of Buttonwillow gas field may exert a very pronounced effect on other gas fields throughout the state because if Buttonwillow is unable to meet the normal demands upon it, Delano, Dudley Ridge, Goleta and Semi-Tropic gas fields will be called upon to make up any deficit. In addition to these recognized gas fields, drilling operations have indicated possible substantial accumulations at Buena Vista Lake and in the Chowchilla district, although it will require additional drilling in both areas before this is definitely established. Gas fields have been of very little economic importance in California up to the present because so far there has been a superabundance of oil gas which has been given priority right in the demand for natural gas.

The effect of the petroleum administrator's order which provides for reallocation of oil and gas production in the Kettleman North Dome Field may not be fully felt for several months as the demand for natural gas is substantially lower during the summer months. If it is continued in force next winter operators will find it necessary to open up some of their gas reserves. This does not seem to be of any consequence at the present time, but operators holding acreage in gas fields may find it advantageous to proceed with development work because this neglected reserve may become of economic importance.

Field Extended

The Pacific Drilling Corp. extended the eastern limits of the Playa Del Rey Field of Los Angeles Basin nearly 1,000 feet eastward by completing No. 1 Barnhart, an outpost, flowing 4,960 bbls. per day early this week, and while this well is of considerable importance operators are still undecided as to the extent of this new area in the extreme eastern end of the field. Based on contours projected from the older section of the field, this new well did not exceed expectations as these contours indicate that production should normally be expected east of Manchester Avenue. Completion of this well, however, indicated that commercial production might be developed much farther east of Manchester Avenue than is generally expected. This well is located so close to the projected axis that it is rather risky to drill a new well a few hundred feet north or south.

These new wells being finished out in the so-called eastern section of the Playa

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	April 14		April 7			
Intercoastal-domestic—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Fuel oil	.....	.....	.....	.....	.....	4,732,643
Diesel and gas oil	.....	.....	.....	.....	527,098	734,436
Gasoline	116,894	16,699	.....	.....	1,703,346	1,645,349
Kerosene	.....	.....	.....	.....	468,421	427,386
Foreign exports—						
Crude oil	230,736	32,962	284,885	40,698	3,198,034	2,208,078
Fuel oil	84,620	12,089	122,725	17,675	4,562,577	3,685,136
Diesel and gas oil	91,741	13,106	27,299	3,900	1,037,174	1,290,715
Gasoline	253,426	36,204	87,421	12,489	1,488,900	1,142,228
Kerosene	59,875	8,554	6,380	911	331,731	285,861
Other finished oil	.....	.....	.....	.....	.....	3,529
Other unfinished oil	3,648	521	.....	.....	45,712	34,363
Coastwise-domestic—						
Crude oil	.....	.....	.....	.....	1,424,652	2,963,760
Fuel oil	75,046	10,721	66,193	9,456	2,353,202	3,548,822
Diesel and gas oil	.....	.....	.....	.....	211,867	250,431
Gasoline	122,724	17,532	75,926	10,847	1,999,776	3,079,391
Kerosene	.....	.....	.....	.....	34,598	50,041

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Diesel and gas oil	.....	.....	.....	.....	157,258	448,113
Gasoline	.....	.....	.....	.....	.....	72,625
Kerosene	.....	.....	.....	.....	149,715	197,498
Asphalt	.....	.....	.....	.....	71,325	.....
Lubricants	.....	.....	.....	.....	12,381	8,310
Foreign exports—						
Crude oil	.....	.....	.....	.....	550,129	517,100
Fuel oil	41,780	5,826	.....	.....	442,025	234,129
Diesel and gas oil	.....	.....	.....	.....	342,812	580,136
Gasoline	.....	.....	.....	.....	780,368	1,053,632
Kerosene	.....	.....	.....	.....	213,898	232,220
Lubricants	.....	.....	.....	.....	50,569	58,458
Other unfinished oil	.....	.....	.....	.....	.....	5,750
Coastwise-domestic—						
Fuel oil	292,106	41,729	400,544	57,221	1,440,241	1,004,185
Diesel and gas oil	.....	.....	.....	.....	79,662	87,029
Gasoline	112,409	16,058	160,728	22,961	1,134,030	1,218,541
Kerosene	.....	.....	.....	.....	10,149	44,690

Del Rey Field have so far been located in close proximity to the axis and consequently the extent of the structure is still more or less conjectural. It is of interest, however, to note that the porosity and thickness of the oil sand is still more favorable than prevailed in the older section of the field. As soon as one or two wells are drilled out on the flanks one should be able to form a fairly good opinion as to just how important this new area will be. Based on data available at present, the productive area should extend beyond Manchester Avenue on the east but the structure is dipping to the east and contours projected from the older section of the field are closing in. One well in this new section showed very definite evidence of extensive faulting and this may exert far more effect than is evident at present. The high productivity and relatively large amount of oil sand logged in new wells tends to warn operators not to sell this new area short because it is still anyone's guess. Production contours indicate that the productive limits will not extend very far beyond Manchester Avenue but it might be well to remember that faulting or some other subterranean disturbance may prove of more importance than is evident at the present time.

In view of the uncertainty, it might be well for operators to proceed cautiously because there is very little geological data on which to predicate future work.

Montebello

The Universal Consolidated Oil Co. appears to have found another possibly productive oil zone in No. 2 Nutt, an outpost located in the extreme eastern end of the Montebello Field of Los Angeles Basin, and preparations are under way to ascertain the importance of this oil sand. Deep drilling in the Montebello Field has proven to be a dismal failure up to the present for the simple reason that operators have concentrated drilling operations in the area west of the Universal's first deep test. It has become obvious that the productive area in the eastern end of this field does not extend west, and with this idea in view the Universal moved a few locations to the east. This well, No. 2 Nutt, found an oil horizon several hundred feet higher than the Cruz Zone found in the discovery well. The company has made an exhaustive test of this zone but it has failed to show commercial production.

Following the failure of the Nutt zone to show sustained production, the Universal Consolidated decided to deepen No. 2 Nutt in order to explore ahead. As a result of this decision the company's No. 2 Nutt logged a new oil sand a little below the original zone. This well has been bottomed at 5,503 feet and has cored approximately 50 feet of oil sand that shows evidence of resulting in commercial production. Failure of the Universal Consolidated to develop commercial production in the eastern end of the Montebello Field has had a tendency to divert attention from this work and operators are now watching the outcome of drilling operations being started by the Texas Co. Unfortunately the Universal Consolidated is hampered in its work because of its connection with the Richfield Oil Co. as the latter company, being in receivership, is unable to give the Universal the support it deserves. The possible development of commercial production in the eastern end of the Montebello Field is still as good as it was a few months ago and operators should not discount the possibilities of this field in making allowances for future production. The only question which some operators entertain is whether the new area will be capable of substantial production or whether it will just be another disturbing factor. Another month or so will decide this question.

New Wildcat

It has been a long time since a new oil field has been discovered in Southern California, and while it may be several years before another new productive district is opened, operators should not overlook the test being made by the Doyle Petroleum Co. in the Manhattan area of Los Angeles Basin. Very little data has been released on this wildcat although the company has not had any hesitancy to release the depth of the hole. It is interesting to note, however, that the hole is being reamed out and while the company reports indicate that this is being done to eliminate a few tight places several operators are of the opinion that the Doyle Petroleum Co. has found something to justify the landing of casing. Up to the present, no pipe has been placed on the rack but confidential data indicates that casing will be landed and cemented in this hole within 10 days. Vernon King, who is doing the geological and engineering work on the well, is noncommittal, but from outside sources reports indicate that a fairly promising oil sand has been found. Watch drilling operations on this test during the next few weeks as it looks hot.

Several wells were finished in the Long Beach Field of Los Angeles Basin during the past week but some of them failed to show commercial production because of a high water cut. Great Western Oil Co., however, succeeded in finishing its No. 1 Signal pumping 598 bbls. of clean 25.6 gravity oil per day from 4,412 feet. This well was finished with a 4¾-inch liner carrying 51 feet of perforated. No. 1 Roan of the R. R. Bush Oil Co., another new well, proved somewhat of a disappointment upon completion at 4,660 feet as it was good for only 70 bbls. of 24.1 gravity oil cutting 27 per cent water. General Petroleum's No. 7 Boyle-Perry was another well that proved unfavorable as it was good for only 415 bbls. of 19.9 gravity oil cutting 23 per cent water upon completion at 3,048 feet. Pencole Oil Co.'s No. 1 Kilburn also proved wet upon being given a production test this week as it showed an initial of 111 bbls. of 23.4 gravity oil cutting 38 per cent from 4,607 feet. Tom Aitken's No. 1 Signal, finished at 4,462 feet, was brought in on the beam pumping 114 bbls. per day but the output was still cutting 44 per cent at last reports. These wells put on production in the Long Beach Field during the past week should go a long way toward reducing drilling operations, but there have been enough locations staked during the past 10 days to justify the expectation that drilling operations in this field will continue at a fairly active rate.

Dominguez

The Union Oil Co. added a new well to its string of producers in the Dominguez Field of Los Angeles Basin this week by finishing No. 5 Carson doing 160 bbls. of 29.7 gravity oil per day from 6,804 feet. In addition to the Pacific Drilling Co.'s No. 1 Barnhart, mentioned above, two additional wells were finished in the Playa Del Rey Field of Los Angeles Basin. These wells were the Union's No. 8 Del Rey, which proved good for 340 bbls. per day from the shal-

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.	T.	R.	Depth	Status—
Macrate, A. N., No. 1 Athens, Los Angeles Co.	18-	3-12		6,462	prod. test
Republic Pet., No. 1 Lawndale, Los Angeles Co.	18-	3-14		5,004	suspended
Associated Oil Co., No. 3 Inglewood Deep, Los Angeles Co.	7-	2-14		2,281	sd. sh. drlg.
Standard Oil Co., No. 4 Inglewood Deep, Los Angeles Co.	17-	2-14		4,090	suspended
Standard Oil Co., No. 5 Inglewood Deep, Los Angeles Co.	17-	2-14		6,284	suspended
Standard Oil Co., No. 6 Inglewood Deep, Los Angeles Co.	8-	2-14		162	sd. drlg.
Ohio Oil Co., No. 16 Del Rey, Los Angeles Co.	28-	2-15		3,855	pump 175 b.d.
Bel-Mar Oil Co., No. 1 Del Rey, Los Angeles Co.	27-	2-15		3,162	sd. sh. drlg.
Pacific Drlg. Co., No. 1 Del Rey, Los Angeles Co.	27-	2-15		6,697	flow 3,700 b.d.
Stockburger, Roy, No. 1 Del Rey, Los Angeles Co.	27-	2-15		4,171	sd. sh. drlg.
Fourl, C. W., No. 3 Del Rey, Los Angeles Co.	27-	2-15		6,511	O.S. drlg.
Ritelube Oil Co., No. 1 Del Rey, Los Angeles Co.	27-	2-15		6,752	sd. sh. drlg.
Mathews Pet. Co., No. 1 Del Rey, Los Angeles Co.	27-	2-15		5,460	redrlg. 550
Birch Royer Oil Co., No. 1 Del Rey, Los Angeles Co.	34-	2-14		3,881	sd. sh. drlg.
Lor-Mar Oil Co., No. 1 Del Rey, Los Angeles Co.	27-	2-15		6,683	O.S. drlg.
Joyce Oil Co., No. 1 Del Rey, Los Angeles Co.	27-	2-15		4,192	sd. sh. drlg.
Union Oil Co., No. 8 Del Rey, Los Angeles Co.	27-	2-15		3,872	prod. test
Union Oil Co., No. 10 Del Rey, Los Angeles Co.	27-	2-15		6,034	cmtd 6,030
Union Oil Co., No. 11 Del Rey, Los Angeles Co.	27-	2-15		....	rigging up
Big Ben Oil Co., No. 1 Del Rey, Los Angeles Co.	27-	2-15		6,758	redrlg. 4,900
Doyle Pet. Co., No. 1 Manhattan, Los Angeles Co.	30-	3-14		6,780	reaming
Western Gulf, No. 1 Maywood, Los Angeles Co.	16-	2-12		....	bldg. rig
Vanco Dev. Co., No. 1 Artesia, Los Angeles Co.	25-	3-12		2,531	sd. sh. drlg.
Monarch Oil Corp., No. 1 Topanga, Los Angeles Co.	5-	1-16		....	rig, suspended
Universal Consd., No. 2 Montebello, Los Angeles Co.	5-	2-11		5,481	deepening
The Texas Co., No. 1 Montebello, Los Angeles Co.	5-	2-11		....	rigging up
Woodward Oil Co., No. 1 Montebello, Los Angeles Co.	4-	2-11		....	bldg. rig
Frontier Oil Co., No. 1 Pico, Los Angeles Co.	7-	2-11		3,251	sd. sh. drlg.
Shively, N. O., No. 1 Puente Hills, Los Angeles Co.	23-	2-10		3,190	wet
Pressel & Tull, No. 1 Puente Hills, Los Angeles Co.	30-	2- 9		4,291	hd. sd. drlg.
International Dev. Co., No. 1 Saugus, Los Angeles Co.	34-	5-16		4,335	cleaning out
Platt & Collins, No. 1 Costa Mesa, Orange Co.	14-	6-10		2,560	cleaning out
Wilshire Oil Co., No. 1 Newport, Orange Co.	28-	6-10		75	sd. sh. drlg.
Bartholomae Oil Co., No. 2 East Coyote, Orange Co.	22-	3-10		3,626	cmtd. 3,219
Great American Pet. Co., No. 2 East Coyote, Orange Co.	22-	3-10		3,454	hd. sd. drlg.
Stephens, J. T., No. 1 Chula Vista, San Diego Co.	27-18-	2		1,451	hd. sd. drlg.
Great American Pet. Co., No. 4 Chino, San Bernardino Co.	7-	2-	8	465	sd. sh. drlg.

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low zone at 3,872 feet, and the Ohio's No. 16 Recreation, which was brought in on the beam pumping 178 bbls. of 22.9 gravity oil per day from 3,855 feet.

The west front of the Kern River is undergoing a revival of drilling following completion of a rather good well by the Kern River Oilfields Co. a few weeks ago. This outpost proved much better than was anticipated and officials of the St. Helens Petroleum Co. who supervised drilling operations are to be congratulated. Charles Drader was right on the job and his drilling crew did not disappoint him. The St. Helens has always had a rather efficient drilling gang and if officials of the company would only give Charlie Drader sufficient leeway to go ahead the company would be right up in front. The destinies of this company are directed from London and this has always been a hindrance. The Shell tried to run its American subsidiaries from the Hague for several years but finally gave it up when other operators stepped in and took direct action. Despite the hindrance attached to remote control, the St. Helens has experienced more success than the average run of American companies. Directors of this concern should give more consideration to California activities because officials have been unable to take advantage of opportunities and this is only logical because when an area gets hot executives must make instant decisions. They cannot wait for approval several days hence. This company is sitting in a very advantageous position but has found remote control too distant to appreciate the opportunities presented.

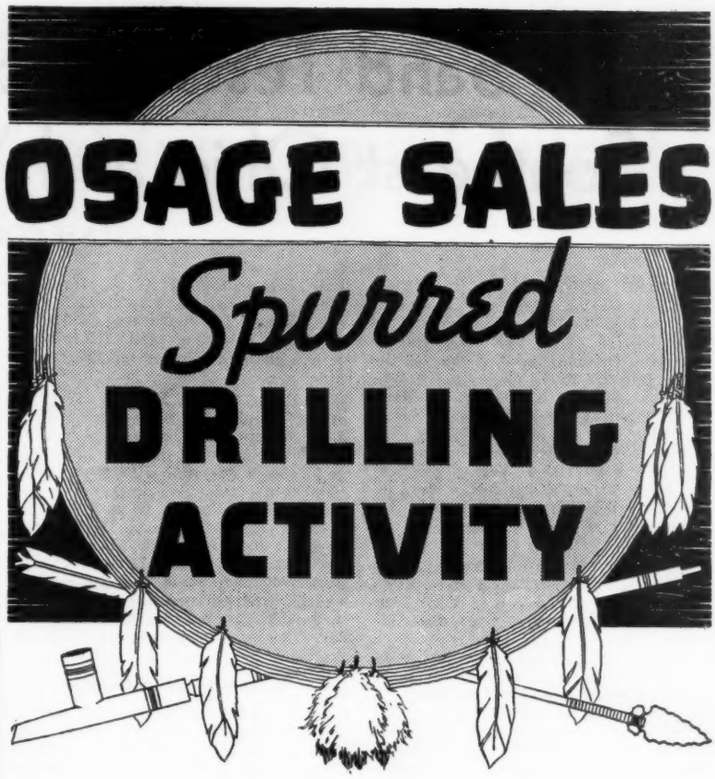
Increased Drilling

Following completion of the Kern River Oilfields' initial well in Section 25-28-27 a few weeks ago, operators out on the

(Continued on Page 114)

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S. T. R.	Depth	Status—
Shell Oil Co., No. 4 Capitan, Santa Barbara Co.	5- 4-30	2,875	cmtd. 2,815
General Petroleum, No. 14 Capitan, Santa Barbara Co.	32- 5-30	....	rigging up
Freeman, M. J., No. 1 Purisima, Santa Barbara Co.	11- 7-33	....	rigged up
Casmite Co., No. 1 Casamilia, Santa Barbara Co.	13- 9-35	1,310	cmtd. 1,200
Scully & Snyder, No. 1 Naples, Santa Barbara Co.	7- 4-29	6,320	D.P. stuck
Barnsdall-Rio Grande, No. 10-48 Elwood, Santa Barbara	tideland	3,540	reaming
Barnsdall-Rio Grande, No. 2 Elwood, Santa Barbara Co.	15- 4-29	4,551	sd. sh. drlg.
East Elwood Pet. Co., No. 1 Elwood, Santa Barbara Co.	14- 4-29	3,767	suspended
Signal Oil & Gas Co., No. 4 Elwood, Santa Barbara Co.	tideland	....	rigging up
Shell Oil Co., No. 1 Goleta, Santa Barbara Co.	20- 4-28	6,508	gas well, idle
West Elwood Oil Co., No. 1 Goleta, Santa Barbara Co.	9- 4-28	3,715	cmtd.
Las Posas Pet., No. 1 Las Posas, Ventura Co.	22- 3-20	8,116	fishing
Calco Pet. Co., No. 1 Las Posas, Ventura Co.	17- 3-20	....	bldg. rig
Union Oil Co., No. 1 Bardsdale, Ventura Co.	12- 3-20	725	sd. sh. drlg.
Goldray Oil Co., No. 1 Rincon, Ventura Co.	20- 4-24	....	rig, suspended
Oil Ridge Oil Co., No. 1 Ventura, Ventura Co.	1- 4-19	1,533	suspended
El Rancho Oil Co., No. 1 South Mountain, Ventura Co.	9- 3-19	520	sd. sh. drlg.
The Texas Co., No. 128 South Mountain, Ventura Co.	4- 3-19	6,352	sd. sh. drlg.
Bolsa Chica Oil Co., No. 2 Piru, Ventura Co.	4- 4-18	2,070	br. sh. drlg.
Continental Oil Co., No. 1 Ojai, Ventura Co.	12- 4-23	2,241	P.B. 1,693
High Mesa Oil Co., No. 1 Ojai, Ventura Co.	16- 4-22	160	sd. sh. drlg.
Prop. Service Corp., No. 1 Lloyd, Ventura Co.	24- 3-23	7,110	cleaning out
Continental Oil Co., No. 4 San Miguelito, Ventura Co.	23- 3-24	1,771	sd. sh. drlg.
Standard Oil Co., No. 1 Lost Hills, Kern Co.	2-26-20	3,328	fish. D.P.
Continental Oil Co., No. 1 McDonald, Kern Co.	7-28-20	2,373	sd. sh. drlg.
General Pet., No. 1 South Belridge, Kern Co.	30-28-21	11,377	suspended
Standard Oil Co., No. 1-A North Belridge, Kern Co.	36-27-20	8,615	O.S. drlg.
Standard Oil Co., No. 2 North Belridge, Kern Co.	36-27-20	6,691	sd. sh. drlg.
Belridge Oil Co., No. 32-35 North Belridge, Kern Co.	35-27-20	4,581	sd. sh. drlg.
Standard Oil Co., No. 1 Delano, Kern Co.	1-25-23	2,455	gas, shut in
Standard Oil Co., No. 2 Delano, Kern Co.	1-25-23	2,480	dry gas well
Standard Oil Co., No. 3 Delano, Kern Co.	12-25-23	....	bldg. rig
Standard Oil Co., No. 4 Delano, Kern Co.	34-24-23	....	bldg. rig
Trico Oil & Gas Co., No. 1 Alpaugh, Kern Co.	3-25-23	2,525	gas well
Trico Oil & Gas Co., No. 3 Alpaugh, Kings Co.	36-24-22	4,400	sd. sh. drlg.
Trico Oil & Gas Co., No. 4 Alpaugh, Kern Co.	3-25-23	....	rigging up
Associated, No. 1 Kern Front, Kern Co.	23-28-27	....	rigging up
Kern River Oilfields, No. 2, Kern Front, Kern Co.	25-28-27	1,596	sd. sh. drlg.
Golden Bear Oil Co., No. 1 Kern Front, Kern Co.	32-27-27	4,121	sd. sh. drlg.
Hancock Oil Co. No. 6, Mountain View, Kern Co.	14-30-28	4,936	sd. sh. drlg.
Hancock Oil Co., No. 7 Mountain View, Kern Co.	14-30-28	....	rigged up
Shell Oil Co., No. 1 Mountain View, Kern Co.	32-30-29	5,769	reaming
C. C. M. Oil Co., No. 1 Mountain View, Kern Co.	11-30-28	1,581	sd. sh. drlg.
Union Oil Co., No. 5 Mountain View, Kern Co.	15-30-28	5,685	P.B. 5,612
Union Oil Co., No. 6 Mountain View, Kern Co.	9-30-28	7,340	sd. sh. drlg.
General Petroleum, No. 4 Mountain View, Kern Co.	14-30-28	1,191	sd. sh. drlg.
Vesta Pet. Co., No. 1 Mountain View, Kern Co.	19-30-29	3,000	sd. sh. drlg.
Mohawk Oil Co., No. 10 Mountain View, Kern Co.	30-30-29	....	rigging up
Hogan Pet., No. 7 Mountain View, Kern Co.	32-30-29	4,844	sd. sh. drlg.
Hogan Pet., No. 8 Mountain View, Kern Co.	29-30-29	5,927	cmtd.
Jergins Trust, No. 5 Mountain View, Kern Co.	24-30-28	5,250	sd. sh. drlg.
Standard Oil Co., No. 7 Mountain View, Kern Co.	13-30-28	....	rigging up
Ohio Oil Co., No. 1 Mountain View, Kern Co.	33-30-29	5,999	suspended
Ohio Oil Co., No. 2 Mountain View, Kern Co.	33-30-29	....	bldg. rig
Mountain View Oil Co., No. 1 Mountain View, Kern Co.	25-30-28	5,650	cmtd. 5,390
Jergins Trust, No. 5 Edison, Kern Co.	14-30-29	1,600	rig to pump
Jergins Trust, No. 6 Edison, Kern Co.	13-30-29	3,755	granite, idle
Shell Oil Co., No. 5 Edison, Kern Co.	21-30-29	4,892	br. sh. drlg.
Shell Oil Co., No. 6 Edison, Kern Co.	14-30-29	2,979	swab 100 b.d.
Major Oil Co., No. 1 Edison, Kern Co.	18-30-29	316	sd. sh. drlg.
Shell Oil Co., No. 7 Edison, Kern Co.	14-30-29	....	location
Chaulk Oil Co., No. 1 Edison, Kern Co.	5-30-29	3,876	suspended
Nelco Oil Co., No. 1 Edison, Kern Co.	5-30-29	571	sd. sh. drlg.
Mohawk Oil Co., No. 1 Edison, Kern Co.	3-30-29	3,300	sd. sh. drlg.
General Pet., No. 4 Edison, Kern Co.	14-30-29	2,551	P.B. 1,708
General Pet., No. 5 Edison, Kern Co.	15-30-29	....	rig, suspended
Ohio Oil Co., No. 4 Edison, Kern Co.	4-30-29	....	location
Appling, C. E., No. 1 Edison, Kern Co.	4-30-29	2,983	sd. sh. drlg.
Goldman, Frank, No. 1 Edison, Kern Co.	30-29-30	415	sd. sh. drlg.
Woodward Oil Co., No. 2 Edison, Kern Co.	31-29-30	497	rig to pump
Woodward Oil Co., No. 3 Edison, Kern Co.	36-29-29	520	cleaning out
General Pet., No. 1 Arvin, Kern Co.	1-32-29	1,161	sd. sh. drlg.
Tejon Ridge Oil Co., No. 1 Comanche, Kern Co.	23-32-29	1,724	suspended
Hall-Baker Co., No. 1 Arvin, Kern Co.	16-31-30	1,276	C.P. 1,210
Sea Cliff Oil Co., No. 1 Greenfield, Kern Co.	7-31-28	5,396	sd. sh. drlg.
Standard Oil Co., No. 1 Semi-Tropic, Kern Co.	8-27-23	3,200	gas, shut in
Standard Oil Co., No. 2 Semi-Tropic, Kern Co.	5-27-22	....	rigging up
Shell Oil Co., No. 1 Buena Vista, Kern Co.	9-32-25	5,828	hd. sh. drlg.
Reserve Oil & Gas Co., No. 1 Tejon, Kern Co.	2-10-19	3,708	will redrl.
Reserve Oil & Gas Co., No. 2 Tejon, Kern Co.	12-10-19	2,154	hd. sd. drlg.
Badger Oil Co., No. 1 Tejon, Kern Co.	31-11-19	6,248	dry, abd.
Taft Well Drlg. Co., No. 1 Kreyenhagen, Fresno Co.	33-22-16	....	bldg. rig
Standard Oil Co., No. 1 Coalinga, Fresno Co.	13-20-14	....	rigging up
Wellington Oil Co., No. 1 Coalinga, Fresno Co.	14-20-14	780	sd. sh. drlg.
Milham Expl. Co., No. 1 Ora Loma, Fresno Co.	12-12-11	2,948	sd. sh. drlg.
Ruse Oil Synd., No. 1 Ora Loma, Fresno Co.	28-12-11	5,070	sd. sh. drlg.
Union Oil Co., No. 1 Lillis-Kettleman, Fresno Co.	24-21-16	10,944	redrlg. 7,338
K. N. D. A., No. 56 Kettleman, Kings Co.	8-22-16	10,154	redrlg. 10,032
Standard, No. 2 Kettleman Middle, Kings Co.	29-32-19	5,500	sd. sh. drlg.
Continental Oil Co., No. 1 Kettleman-South, Kern Co.	7-25-20	5,299	cmtd. 5,298
Farrel Pet., well No. 1 San Luis Obispo Co.	18-31-12	1,610	cmtd.
Willett Oil Co., No. 1 Cholame, San Luis Obispo Co.	10-25-15	3,687	cleaning out
Kings River Oil Pool, well No. 1, Tulare Co.	29-16-22	2,161	sd. sh. drlg.
Schuster, C. R., No. 1 Tulare, Tulare Co.	27-22-23	....	rig, suspended
Kabella Oil Corp., No. 1 Terra Bella, Tulare Co.	12-23-27	765	sd. sh. drlg.
Commonwealth Consd. Gas Co., No. 1 Tulare Lake, Kings	21-22-20	2,490	gas well
Commonwealth Consd. Gas Co., No. 2 Tulare Lake, Kings	21-22-20	304	sd. sh. drlg.
General Pet., No. 1 Devil's Den, Kings Co.	20-24-18	1,497	br. sh. drlg.
Amerada Pet., No. 1 F. L. D., San Joaquin Co.	15- 2- 5	3,002	hd. sh. drlg.
Pure Oil Co., No. 1 Chowchilla, Madera Co.	7-10-14	8,402	gas well, idle
Northern Counties Pet., No. 1 Tehama, Tehama Co.	25-24- 3	3,954	hd. sh. drlg.
The Texas Co., No. 1 Petrolia, Humboldt Co.	1- 3- 2	5,675	sd. sh. drlg.
Shell Oil Co., No. 1 Branch, Monterey Co.	34-24-10	450	sd. sh. drlg.



The first Osage Sale was held November 11, 1912, and this leasing of large blocks of Indian Lands contributed largely to oil development in Northeastern Oklahoma.

The most outstanding development of this period took place in the Burbank Field. Its first well was brought in during 1920, and at the close of 1921, one hundred and seventeen producing wells had been brought in at Burbank, and not one dry hole.

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Deep Sand Tests Holding Focus of Interest in Southeast Ohio and West Virginia Districts

By STAFF CORRESPONDENT

PITTSBURGH, Pa., Apr. 29.—While yet disappointing, deep sand tests continue to hold the focus of interest in the lower eastern fields. The latest test to reach the Oriskany sand is that of the Union Gasoline & Oil Corp. on the William Jenkins farm, SE Section 30, Madison Township, Columbiana County, Southeast Ohio. The top of the Oriskany sand was at 4,543 feet with gas showing one foot in the formation. The volume was not large, about 50,000 feet a day, increasing with depth to about 125,000 feet a day and a showing of a very light colored oil. The sand was sharp.

The test is about 1 mile from Glascow on the Glascow anticline. The elevation of the mouth of the well is 1,327 feet. Considerable geophysical work was done in the vicinity last summer.

In West Virginia, two tests are within striking distance of the Oriskany sand. In Elk district, Kanawha County, Clyde Oil & Gas Co. reached top of the Corniferous lime at 4,722 feet on the F. W. Shinn (M. W. McGraw) farm and shut down at 4,730 feet to run 5⅛-inch casing. In this district, Benedum & Trees are down 4,100 feet on the Mary C. Wingfield farm. Yoak Oil & Gas Co. resumed drilling on the W. T. and J. H. Goshorn farm and reached 2,890 feet. In this district Columbian Carbon Co. is building a rig for a deep test on the G. and D. Copenhaver farm on the waters of Little Sandy Creek about 5½ miles from the Elk River.

In Cabin Creek district, Godfrey L. Cabot, Inc., reached 6,140 feet on the Arabella D. Huntington farm. The top of the Corniferous lime was at 6,088 feet. In Loudin district this operator has reached 1,024 feet in a deep test on the Edgwood Realty Co. lease, and has a location on the Kanawha Land Co.

In Jefferson district, Kanawha County, Benedum & Trees recovered the tools and resumed drilling on the Joseph Hill farm. The depth is now 1,604 feet. In Malden district, Owens Illinois Glass Co. has started drilling No. 10 on the C. Q. Crockett lease.

Total completions were few in the lower eastern fields during the week. Besides two dry holes, six gas wells and three small producers with an initial production of 3 bbls. were reported. Several new locations were made during the week.

WEST VIRGINIA

Four gas wells, two small producers and one dry hole totaled the week's work in West Virginia. In Pleasants County M. C. Martin drilled the test on the John Carder farm in Grant district to 3,125 feet, the Gordon sand, which was dry. The hole was plugged back to the only pay, a 1-bbl. producer in the Horseneck sand at a depth of 630 feet.

In Centerville district, Tyler County, Smith & Kerns completed a test on the James Ripley farm in the Injun sand at a depth of 2,220 feet. It will make a 1-bbl. pumper.

Gas Wells

In Kanawha County, on Lick Branch of Coal River in Washington district, Cambridge Gas Co. completed a second test on the William Compton farm in the Brown shale at a depth of 3,375 feet. It is a gas well gauging about 200,000 feet a day.

In Calhoun County, Boyce Fowler and others completed a test on the Lowman Fowler farm in Sherman district in the Injun sand at a depth of 2,079 feet. It is a gas well gauging 94,000 feet a day, natural.

In Ritchie County, W. R. Hays and others completed No. 4 on the Levi Wilson farm on Dutchman Run in Murphy district in the Injun sand at 2,103 feet. It is a gas well showing for 179,600 feet a day.

In Roane County, Howard Jarvis and others completed a second test on the J. S. Rogers farm in Geary district in the Salt sand at a depth of 1,323 feet. It is also a gas well with a volume of 150,000, natural.

In Hancock County, R. J. Braden Co. drilled a test on the George Phillips farm in Grant district to 1,055 feet and abandoned it as dry. On Kings Creek in Butler district, same county, Edmund Vaughan reconditioned No. 2 on his own farm which is producing about 2 bbls. a day. The farm is mapped as the J. M. Scott.

Drilling in West Virginia

In Boone County, most of the activity is in Washington district where four wells are drilling. Boone County Coal Co. resumed drilling and has reached 1,750 feet in No. 2 on its own tract. Pond Fork Oil & Gas Co. is down 850 feet in No. 20 on the Cole and Crane lease. Owens Illinois Glass Co. is drilling two wells, No. 2 on the S. M. Wheeler heirs farm at 600 feet, and No. 21 on the S. M. Cassingham farm. In Sherman district Pure Oil Co. is down 460 feet in No. 73 on the Federal Coal Co. tract.

In Cabell County, R. J. Petry and others have started drilling on the Virginia Powell lease in Guyandotte district. In McComas district, R. H. Adkins, trustee, is rigging up on the Benjamin Bledsoe farm. R. H. Adkins and others have reached 1,000 feet on the H. S. Fraley farm, No. 2. Boyles and Gardner are drilling at 1,700 feet on the Edward Owens farm.

In Calhoun County, Everett Starcher and others have made a location on the C. C. Starcher farm in Lee district. Ezekiel Ferrell and others are building a rig on the Johnathan Burrows farm in Sherman district. Dudley Lutz and others shut down at 2,220 feet testing the Injun sand on the Elias Yoak farm. H. S. Adams and others have started drilling on the Ivy Gainer farm.

In Doddridge County, L. C. Shinn reached 1,100 feet and shut down for repairs on the J. R. Hiley farm in Central district. In Gilmer County, Godfrey L. Cabot, Inc., is drilling No. 2 on the J. L. McKinney farm in Center district and started from the Maxon sand.

In Pleasants County, M. C. Martin started drilling on the Pauline Hammett farm in Jefferson district. In Raleigh County, Godfrey L. Cabot, Inc., reached 3,053 feet in No. 6 on the Beaver Coal Co. tract in Slab Fork district and is still testing gas in the sand at 3,211 feet in No. 7.

In Ritchie County, W. H. Mosser has made a location on the G. L. Goff farm in Murphy district. Creed Barker is drilling No. 5 on the W. P. Barker farm and has reached 1,135 feet. In Grant district, on the waters of Sheep Run, H. N. Rinehart has a rig standing for No. 7 on the F. H. Market farm. Edward Deem shut down deepening No. 2 on the W. Clark farm and is testing the Injun sand at 1,910 feet. Russell Morris is down 1,860 feet on the A. C. Scaddon farm. In Clay district, J. C. Smith and others are down 500 feet in No. 4 on the Lewis Hanlon farm. Smith & Hendershot are down 1,450 feet in No. 4 on the Charles Wilson, Sr., farm.

In Roane County, K. M. Hunt and others are spudding on the T. J. Murray (30 acres) farm in Curtis district. Same operator is building a rig on the T. W. Lattimer farm and is drilling at 1,040 feet in a second test on the T. J. Murray and others lease. D. W. Law and others have spudded on the J. D. Lyons farm. McIntosh and Norman are spudding on the same lease. Clyde W. Campbell has spudded in and started drilling the test on the Marcellus farm. In Spencer district, D. S. Fisher and others have the material on the ground for No. 3 on the Stella V. Knotts farm. Henderson Oil Co. is drilling at 700 feet on the Vineyard and Vandevender lease. In Smithfield district, Orchard Run Oil & Gas Co. is rigging up on the Leonard Brannon farm. Spencer Natural Gas Co. has rigged up on the J. D. Young farm. Jackson & Bowers have reached 1,200 feet on the J. A. and Amy Sarver farm. In Curtis district, K. M. Hunt and others are building a rig for No. 3 on the Lizzie Moore heirs farm. D. W. Law and others have a location on the Jeannette farm. Reedy Oil & Gas Co. has made a location on the Alfred Moore heirs farm.

In Wirt County, R. C. Waggoner has reached 1,200 feet in a second test on the James W. Ferree farm in Burning Springs district. In Wood County, John Leeton and others are down 1,350 feet on the E. C. Morehead farm in Walker district.

SOUTHEAST OHIO

One small producer, two gas wells and one dry hole was the total new work in Southeast Ohio. The producer was No. 5 of Charles H. Vaughn and others on the Andrew Vaughn farm in the Muskingum River Valley, Lot 2, Muskingum Township, Washington County. It was drilled to the Macksburg 500-foot sand, depth 731 feet, which was dry, and put to producing from the Stray sand at a depth of 416 feet. It will be about a 1-bbl. pumper.

In Meigs County, Meigs Developing Co. completed a test on the J. H. Philson farm, SE Section 30, Lebanon Township. in the Berea sand at a depth of 2,018 feet. It is a gas well with 670,000 feet a day initial. In the same township, central part of Section 36, Ohio Fuel Gas Co. completed a test on the M. Bush farm in the Berea sand at a depth of 1,950 feet. It is also a gas well gauging about 300,000 feet a day.

In Medina County, Oko Oil & Gas Co. drilled No. 66 on the Henry Essig farm, Lots 2 and 3, Tract 13, Chatham Township, through the Berea grit to 386 feet. It was dry.

SOUTHWEST PENNSYLVANIA

No completions were recorded in Southwest Pennsylvania. Several new locations were made. In East Findley Township, Washington County, Pitroi Fuel Co. is spudding on the Harvey F. Taylor farm. Farther south in the same township, Natural Gas Co. of West Virginia has started deepening on the P. I. Ealy farm now at 2,655 feet. On the T. C. Noble farm, this company is down 1,780 feet. The Pittsburgh Coal was at 760 feet.

In North Franklin Township, Washington County, Bungard & Co. have started drilling on the Fred Ward lot. In South Franklin Township, Duquesne Gas Co. is down 1,960 feet in a second test on the S. A. Dague farm.

In West Bethlehem Township, Washington County, Furman Nuss & Co. have started drilling deeper on the Margaret Keys farm after the gas in the Bayard Stray sand blew down. It is drilling at 3,560 feet and the Speechley sand is sought.

In Amwell Township, Washington County, Union Gasoline & Oil Corp. has reached 2,760 feet on the J. C. McCoy farm. Carnegie Natural Gas Co. is hauling a rig to location on the R. M. Carrons farm No. 2.

In Morris Township, Washington County, Carnegie Natural Gas Co. has started drilling No. 1 on the S. L. Harvey farm.

In Greene County, Carnegie Natural Gas Co. has reached 3,590 feet in deepening No. 2 on the George Iseminger farm in Springhill Township. In Washington Township, it is drilling at 3,075 feet in deepening the test on the Russell Johnson farm.

In Richhill Township, Greene County, Lewis & Co. are down 600 feet on the Samuel Chess farm. In Jackson Township, H. E. Milliken and others are fishing for tubing at 2,295 feet preliminary to drilling deeper No. 1 on the H. B. Smith farm. The Pittsburgh Coal was at 1,035 feet. In Gilmore Township, Johnson & Eddy are drilling at 2,000 feet in No. 2 on the W. L. B. Roberts farm. In Perry Township, Carnegie Natural Gas Co. is down 2,685 feet in deepening No. 1 on the Harvey Lemley farm.

In Fayette County, where the deep test of William Snee and others is being drilled on the Summit Hotel property in South Union Township, no progress was made. After considerable water was struck in the Elizabeth and Bayard sands it was necessary to ream and pull and lower the casing. Trouble was encountered.

W-K-M Co. sales staff and other members of force in Gulf Coast and Mid-Continent fields. Left to right, standing: T. M. ("Big Hole") Smith, Gulf Coast and South Texas; A. T. Donnelly, West Texas-New Mexico; C. A. Backer, shop superintendent; W. A. Hammann, Louisiana-Arkansas; E. L. MacBlain, Gulf Coast; M. P. Laurent, chief engineer; George Franks, engineer; Harry B. Cookston, Gulf Coast and South Texas; George A. Clarke, East Texas. Sitting: D. M. "Red" Griffith, Gulf Coast; J. D. Rice, secretary; Fred McManis, president; Lee O. Koen, vice president; L. C. Witten, treasurer; W. H. Eason, Oklahoma-Kansas

Record Production Mark Reached in Michigan; Crystal Township Wildcat Increasing Output

By PAUL A. ELLIOTT
Staff Correspondent, Michigan Fields

MUSKEGON, Mich., Apr. 29.—The past week was a record-breaking period in the Michigan oil industry. Daily crude production reached a new average of more than 39,000 bbls., the State's largest wildcat continued to increase its output, and a record number of 25 permits, including 10 more for the new Crystal area in Montcalm County were issued.

Production during the week ended April 20 averaged 39,023 bbls. a day based on reports of runs by pipe line companies and refineries to the Michigan Producers Proration Committee.

Porter Township, Midland County, showed an increase of about 1,000 bbls. a day, while the Crystal Township wildcat showed a slight increase despite the tools in the hole and an increase from 290 to 330 pounds back pressure. The well is flowing through two master gates with one only three-fourths of a single turn open and the other a half turn open. Both would require eight turns to permit wide open production. On a test last week by state proration officials the well, J. W. Leonard, Jr., and others' No. 1 Otto Durbin, Section 11, Crystal Township, flowed 180 bbls. an hour, indicating a probable increase to more than 4,000 bbls. a day for the week ended April 27.

With the state output threatening to reach 40,000 bbls. a day by May 1, or about double the peak during the Muskegon boom of 1928-29, the federal oil administration has gone only part way in prescribing a limit of 34,300 bbls. a day for May, although this is an increase of 1,600 bbls. over the April allowable.

How much this allowable will mean will depend upon the success of the State Proration Committee in obtaining the cooperation of Crystal and Ogemaw producers in proposed spacing plans and proration. No satisfactory agreement has been reached with the operators who failed to attend two meetings called by James C. Graves, chairman of the Michigan Petroleum Regulatory Committee, representing the federal oil administration. The authority of the federal administration frankly is being questioned by Michigan operators, particularly in the new Crystal area where more than 30 new locations have been made since the discovery well came in and operations started on more than 10 projects.

Crystal Developments

Taggart Brothers, Inc., who moved in a rotary rig in an attempt to speed up drilling operations in the Dundee, struck a pocket of gas at about 1,000 feet in the Marshall or Michigan stray sand. The flow, estimated at 6,000,000 to 8,000,000 feet, was mudded off and drilling continued toward the oil sands. The test is No. 1 Fred Smith, SW SW SW Section 1-10n-5w, Crystal Township, Montcalm County, about half a mile east of the discovery.

Lupher Drilling Co., contractors on No. 1 C. R. West estate for J. W. Leonard, Jr., and others, a direct west offset to No. 1 Durbin, was drilling rapidly with rotary tools. The Smith and West tests were the deepest of the new drilling wells. Other tests moving in, rigging, spudding or starting to drill in Crystal Township include: Gordon Oil Co.'s No. 1 F. Smith, SE SW SW Section 1; Eastern Gulf Oil Co.'s No. 1 George W. Barger, SW SW SE Section 2; Rowmor Corp.'s No. 1 Otto and Goldie Durbin, SE SW SE Section 2; Daily Crude Oil Co.'s No. 1 J. Tow, SE NW SW Section 2; J. W. Leonard, Jr., and others No. 2 G. R. West estate, SE SE SW Section 2; Gordon Oil Co.'s No. 1 Frost Heirs, SE SE SW Section 3; T. F. Caldwell, Inc.'s No. 1 W. W. Robbins, NE NE NE Section 3; Fred Turner and others' No. 1 Jerry McConkey, NW SE SW Section 10; McClanahan Oil Co.'s No. 1 Geneva Flint, NW NW NW Section 11; J. W. Leonard, Jr., and others' No. 3 West estate, NW NE NW Section 11, and T. F. Caldwell, Inc.'s No. 1 William Ingersoll, NE NW NE Section 14.

Prudential Oil & Gas Corp.'s No. 1 Harry and Gertrude L. Hanson, C NE NW Section 1-11n-6w, a wildcat several miles northwest of the Crystal discovery in line with several central Michigan gas fields on the same trend, was nearing the Michigan Stray sand toward which it was drilling as a gas test in the center of the quarter section.

Nearby Operations

Nine other tests have been started in three adjoining townships in Gratiot County: Newark, New Haven and Sumner. They include Newark Gas & Oil Syndicate's No. 1 George Beck, NE SE NE Section 29-10n-3w, Newark Township; Mammoth Petroleum Corp.'s No. 1 Fred J. Graham, SW SE SW Section 31-11n-4w, Sumner Township, and six in New Haven Township: Melvin Drilling Co.'s No. 1 Shaver, Section 4; Strange & Fortney's No. 1 Bovee, NW NE SW Section 7-10n-4w; McClanahan Oil Co.'s No. 1 Arthur Akin, SE SE NW Section 17; T. F. Caldwell, Inc.'s No. 1 D. A. Lindsay, NW SW SW Section 18; T. W. Kelley, J. E. Evans and V. M. Voorhees' No. 1 Anastasia Pancak, NW NW NW Section 18; Columbia Oil & Gas Co.'s No. 1 Davenport, Section 7; and Wicker and Munger's No. 1 Kellogg, Section 17. C. R. Gallagher, of Los Angeles, Calif., took out permits for seven more, doubling the prospective total for New Haven Township, and an eighth location for another test in Crystal Township.

Mr. Gallagher's new locations include: No. 1 J. Carl Ranger, NW SE SW Section 6; No. 1 Donald C. Smith, SW SW SE Section 18; No. 1 Alice Wiedbrank, NW NW SW Section 19; No. 1 Lillian M. Chamberlain and others, NW NW SW Section 17; No. 1 Edwin Burtraw, SW SE SE Section 7; No. 1 John A. Whitman, Jr., SW NW SW Section 9; and the No. 2 Arthur Akin, NW SE NE Section 17. He also obtained a state permit for the No. 1 Floyd Lindsay, NW NE Section 13, Crystal Township. Clyde Miller of Mount Pleasant and William Roper are associated operators.

Mr. Gallagher's eight permits headed the record list of 25 issued during the week of April 17 to 24. Two more Crystal Township locations were Taggart Brothers, Inc.'s No. 2 Fred Smith, NE SW SW Section 1, and Gordon Oil Co.'s No. 1 Fred Smith, previously mentioned.

Three Porter locations are: Carter Lease, Inc.'s No. 7 William Maywood Carter and wife, NE SE SW Section 18-13n-1w; and two for Pure Oil Co.: No. 6 C. D. Alexander, SE SE SE Section 18, and No. 3 Frank Howland, SW NW NW Section 23. Pure took out two in Greendale Township: A. No. 4 Joe Novak, NW SE SE Section 7-14n-2w, and No. 1 Cora A. Fenby, C S half SE SW Section 34, and one in Jasper Township, B. No. 1 Ann Corning estate, C N half NW NW Section 12-13n-2w.

Four Isabella County locations were: W. Hunter Atha's No. 1 William and Minnie Haley, C NE SW Section 31-16n-4w, and Lawson Oil & Gas Corp.'s No. 3-A Arlinda and Arvilla Thayer, NW NE SW Section 23, both in Vernon Township; W. J. Bernier's No. 1 William Robinson, C NE NW Section 1-14n-6w, Broomfield Township, and No. 1 James Gatehouse, C SE SE Section 35-15n-6w, Sherman Township.

Two Mecosta County locations are: Hal-Be-Oyle & Gas Corp.'s No. 1 Taggart Brothers, Inc., C SE NE Section 10-14n-9w, for a Michigan Stray gas sand well in the Austin Township Field and the Gordon Oil Co.'s No. 1 Allen Williams, C SW SE Section 33-13n-7w, a similar gas test in the Millbrook Township Field.

Daily Crude Oil Co. will drill another test in Home Township, Montcalm County, No. 1 H. J. Hansen, SE NE NW Section 10-12n-6w, while Melling Oil & Gas Co. will drill No. 3 State of Michigan lease, NE NE NW Section 6-21n-3e, in the Mills Township, Ogemaw County Pool.

The only real wildcat location is Lowell Development Co.'s No. 1 Anton Kallinger, C N half N half NE Section 35-7n-9w, Vergennes Township, Kent County.

Completions

Six small oil wells and six dry holes comprised the completion record. Four producers added 600 bbls. initial to the Porter Pool, while two boosted the Ogemaw County potential about 300 bbls. a day. Three of the dusters were on wildcat and semiwildcat locations in three Isabella County townships, one was an edge test in West Branch Township, Ogemaw County; one was a bad hole abandoned in Broomfield Township, Isabella County, and the other a rank wildcat in Clinton County.

Porter-Midland

Sun Oil Co.'s No. 8 on the Miller estate, NE NE SW Section 16-13n-1w, which topped the Dundee at 3,383 feet, was completed at 3,429 feet with an initial of 300 bbls. a day. Rex Oil & Gas Co.'s No. 2 F. Howland, SW SW NW Section 23, made 100 bbls. in 16 hours and was estimated good for 150 bbls. a day. Dundee limestone was encountered at 3,380 feet and drilling suspended at 3,420 feet. Pure Oil Co.'s No. 7 Everett Kleinhans, NW NW NE Section 20, topped Dundee at 3,369 feet and drilled to 3,421 feet for an initial of 100 bbls. a day, while Smith Petroleum Co.'s No. 4 Elic Bushre, SE SE NE Section 22, made 50 bbls. initial after acid treatment of the Dundee topped at 3,389 feet and drilled to 3,420 feet.

West Branch-Ogemaw

William R. Wells and Joseph Malloy completed No. 1 Sarah Ann Moss, SW SW SW Section 20-22n-2e, West Branch Township, Ogemaw County, for 180 bbls. during the first 24 hours after acid treatment in the Dundee topped at 2,564 feet and drilled to 2,744 feet. Morris-Van Keuren Syndicate's No. 2 Floyd Fisk, NW SE SE Section 20, same township,

(Continued on Page 121)

Ten Wells Completed in Central Ohio; Three Producers in Kentucky Field

By GEORGE A. WHITNEY
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Apr. 29.—No completions were reported for the week in the old Lima Field, although numerous wells are under way. In Wood County, L. Hillie is reported drilling around 1,290 feet in No. 1 H. Linkey farm, Section 13, Troy Township. Wilber P. Hoople and others are drilling No. 6 Mary Reitze farm, Section 23, Perrysburg Township. Mary V. Concen is drilling on the C. E. Mercer farm, Section 14, Liberty Township, and Pember and Raydure are drilling No. 1 R. E. Wagner farm, Section 27, Jackson Township.

In Hardin County, Simms Oil & Gas Co. is drilling on the Margaret Beach farm, Lot 10,029, Buck Township.

In Sandusky County, O'Brien and others have a rig on the W. A. Koleman farm, Section 15, Jackson Township.

In Seneca County, Industrial Gas Co. is drilling No. 2 James D. Watson farm, in Hopewell Township.

In Wyandot County, Murphy and others have a rig for No. 3 on the R. and R. Criswell farm, Section 17, Tymochtee Township, and Wyanco Oil & Gas Co. has a rig for No. 5 Godlieb Seiler farm, Section 34, Crane Township. Dempsey and others are drilling No. 1 S. P. Hooper farm, Section 7, same township. H. Bosse Brothers & Co. has a rig for No. 1 E. E. Kear farm, Section 16, Salem Township.

CENTRAL OHIO

Ten completions were reported from the Central Ohio Field, two oil wells with an initial of 10 bbls., two dry holes and six gas wells.

In Lorain County, Schneider and Wyles are drilling No. 2 on the A. L. Mills farm, Lot 6, Ridgeville Township. Minor & Co. is drilling No. 3 Mathias Myers farm, Section 32, same township.

In Pike County, J. B. Reed is drilling No. 2 on the Clint McCoy farm, Section 6, Pike Township.

In Perry County, City Natural Gas Works is drilling No. 2 L. V. Kullman, Section 16, Reading Township, and Perry Sturm and others have a rig for No. 1 on the J. T. Vansickle farm, Section 5, same township.

In Ashland County, Ohio Fuel Gas Co. is drilling No. 1 J. W. Mutchler farm, Section 3, Hanover Township. Same company has a rig for No. 1 on the Clare Osborn farm, Section 3, Perry Township, same county. Same company is drilling No. 3 on the A. J. Stoner farm, same township.

In Fairfield County, City Natural Gas Works has a rig on the Mertz-Moyer farm, Section 14, Pleasants Township, and a rig on the F. A. Ruff farm, Section 31, Rush Creek Township.

KENTUCKY

In Ohio County, Mecca Oil Co.'s No. 12 on the J. T. Smith farm, south of Fordsville, produced an initial of 100 bbls. J. C. Miller and others' No. 11 on the J. Ed Smith farm, south of Fordsville, produced 50 bbls. initial. Lowman & Co.'s No. 3 Joe Dodd, in the Oak Pool, same county, produced 15 bbls. initial. Cumberland Petroleum Co.'s No. 20 Rolla Richards, in the Oak Pool, was reported dry.

Largest Initial Producer in Fitts Pool Is Western Extension Well; New Interest Given Lucien

By JAMES McINTYRE

An extension well in the Fitts Pool that also had the distinction of being the largest initial producer in the field; big production as a result of acidizing the dolomite and Wilcox sand in a well in the Lucien Pool in Logan County, and the discovery of what may prove a new Wilcox sand pool 12 miles north of Guthrie in Logan County, were the principal features in an eventful week in Oklahoma.

May Allowables

In line with the allowable production quota established for Oklahoma by the national oil administrator, Harold L. Ickes, Oklahoma's oil wells may produce 500,200 bbls. daily during the month of May, according to the Oklahoma Corporation Commission decision. The May production figures allocated to the various classifications of pools in the State were as follows:

Divisions—	Daily allowable (bbls.)
Class "A" pools	126,600
Class "B" pools	144,900
Class "C" pools	39,300
Class "D" pools	7,300
Voluntary prorated pools	26,100
Unprorated pools	156,000
Total	500,200

A breakdown of the pools in each division or classification and the allowable production of each during the May period follows:

Class A—Wilcox zone of Oklahoma City Field, 126,600 bbls.

Class B pools—Simpson zone of Oklahoma City, 24,000 bbls.; fault line at Oklahoma City, 500 bbls.; Seminole and others, 28,500 bbls.; Little River and others, 15,500 bbls.; Earlsboro and others, 18,500 bbls.; East Little River, 900 bbls.; Mission, 3,300 bbls.; Searight, 3,400 bbls.; East Seminole, 1,200 bbls.; St. Louis, 25,000 bbls.; Maud, 1,200 bbls.; Asher-Wanette, 900 bbls.; Sasakwa, 600 bbls.; Allen, 7,600 bbls.; Sasakwa townsite, 1,700 bbls.; Tatums, 5,100 bbls.; Fish-Cromwell zone, 5,000 bbls.

Class C pools—Crescent, 5,000 bbls.; Edmond, 2,500 bbls.; Fitts-Bromide, 13,000 bbls.; South Fish-Wilcox, 3,500 bbls.; Keokuk Falls, 1,500 bbls.; Lucien, 10,000 bbls.; Polo, 3,000 bbls.; and Gessman, 800 bbls.

Class D pools—Altus, 700 bbls.; Bay Oil, 200 bbls.; Dill, 500 bbls.; East Lucien Viola (Misener), 100 bbls.; Fish-Viola, 200 bbls.; Grayson, 600 bbls.; Grisso, 300 bbls.; Langston, 400 bbls.; South Langston, 100 bbls.; Oklahoma City Cleveland sand, 1,400 bbls.; Simpson above Wilcox, 100 bbls.; Olympic, 200 bbls.; Marathon, 200 bbls.; North Searight, 700 bbls.; Shawnee, 400 bbls.; West Chandler Hoyt, 200 bbls.; Wilzetta, 500 bbls.; Lynch, 200 bbls.; South Keokuk Falls, 200 bbls.; and Wofford, 100 bbls.

Unclassified prorated areas—Naval Reserve, 8,200 bbls.; South Burbank, 11,170 bbls.; West Chandler, 5,000 bbls., and Gray, 1,730 bbls.

Oklahoma City Drilling Zone

Property owners in the newly extended drilling zone of the Oklahoma City Field were planning to appeal their case to the Supreme Court, since their objections to the drilling of wells in the 1,200-acre area, approved for drilling by a vote of the residents of the capital city, have been overruled by District Court Judge Babcock. The court refused to grant a permanent inunction to supersede a temporary injunction that temporarily halted drilling activity in the area.

The first to be presented under the terms of the new well spacing law passed by the present legislature, and signed Monday, April 22, by Governor Marland, was filed with the Corporation Commission by the Carter Oil Co., requesting 20-acre spacing of wells drilled in the new South Keokuk Falls Pool in Seminole County. The case was set for hearing the morning of May 9.

A Logan County Discovery

Logan County's intensely interesting wildcat venture for the past several weeks and one of the closely watched tests in the State came through like a champion the early part of the week in review establishing itself as a discovery well. It is Sinclair Prairie Oil & Gas Co. and others' No. 1 Keotsch, about 12 miles south of Guthrie in the SW cor. Section 23-15-3w, which had been given up as a failure in the first Wilcox sand because of salt water. A decision to proceed to the second Wilcox sand followed with the result that that zone logged from 6,322 to 6,332 feet, total depth, showed 1,700 feet of oil in 30 minutes on a drill stem test, the oil testing 36 gravity at 58° F. It also made several flows of oil, one flow going half way up the rig. It was standing shut in with 4¾-inch casing being cemented at 6,320 feet.

Wildcat Operations in Oklahoma

Week Ending April 27

NORTHERN OKLAHOMA

BECKHAM COUNTY

Fred Coogan et al's No. 1 Shelton, SW cor. Sec. 32-10-25w.
S.D. 3,608 ft.

BLAINE COUNTY

Earl Ingrahm et al's No. 1 Masters, SW NW NW Sec. 27-16-11w.
T.D. 1,205 ft.; C.O.

CADDO COUNTY

H. W. Lee et al's No. 1 Horton, NE NE NE Sec. 9-6-13w.
Rig.

H. W. Lee et al's No. 1 Stacey Ferrell, SW NE NE Sec. 3-6-13w; (2,000-ft. test).
T.D. 2,280 ft.; fishing.

Denver Prod. & Ref. Co.'s No. 1 Noe, NW SW SW Sec. 34-10-10w.
T.D. 11,230 ft.; C.O. to 10,000 ft.; flowing by heads 100 bbls. oil every other day.

CANADIAN COUNTY

R. Carl Larkin's No. 1 Brobine, NW NW NE Sec. 33-13-5w.
Drlg. 4,976 ft.

CLEVELAND COUNTY

Sinclair Prairie et al's No. 1 Franklin, SE NW SE Sec. 21-10-2w.
Oswego 6,515 ft.; Prue 6,530 ft.; drlg. 6,656 ft.

COAL COUNTY

J. D. Petty Oil Co.'s No. 1 McMillan, SW NW NE Sec. 16-1s-8.
S.D. 1,868 ft.

H. F. Potts' No. 1 Nichols, C SW SW NW Sec. 32-2-9.
McLish lime 2,406 ft.; sand 2,621-27 ft.; sulphur wtr.; T.D. 2,710 ft.; H.F.W.; dry and abd.

GARVIN COUNTY

Anderson & Kerr et al's No. 1 Rodke, NW NW SE Sec. 17-4-1w.
Location.

Charles Carter and W. S. Key, Inc.'s No. 1 Wood, C NW SW SE Sec. 5-4-3e.
Sand 1,885-90 ft.; small show of oil; T.D. 2,070 ft.; S.D.

George L. Pace's No. 1 Smith, SW NE Sec. 35-1-1.
S.D. 2,490 ft.

GRANT COUNTY

Helmerich & Payne's No. 1 Crouse, C NE SW Sec. 29-25-8w.
T.D. 6,105 ft., lime; straightreaming 6-in. hole.

GREER COUNTY

M. C. Ent and R. C. Camp's No. 1 Simington, SW SE Sec. 29-5-21w.
R.U. and S.D.

Gled Oil Co.'s No. 1 Luker, SE cor. Sec. 6-4-21w.
Drlg. 620 ft.

Morgan et al's No. 1 Carder, C SW SE Sec. 19-4-22w.
T.D. 1,012 ft.; S.D. for fuel.

HUGHES COUNTY

Amerada Pet. Corp.'s No. 1-A Adams, NE NE SW Sec. 31-9-9.
First Wilcox 4,271 ft.; second Wilcox 4,307-17 ft., T.D.; H.F.W. from both sands; P.B. to 4,095 ft.; good show oil; acidized and flowed 170 bbls. gross oil in 40 min.; dropped to 60 bbls. oil in 24 hrs.; 16,000,000 ft. of gas.

Dandridge & Crane's No. 1 Mead, NW NW NE Sec. 17-5-9.
S.D. 1,325 ft.

Freeman et al's No. 1 Kite, NW NW NE Sec. 8-6-10.
Top sand 700 ft.; show oil; S.D.

Texas Co.'s No. 1 Keaton, NW SW Sec. 4-8-10.
Spudding.

KAY COUNTY

Harris & Haun's No. 1 Schuenster, C NW SW Sec. 2-28-2.
Mississippi lime 3,614 ft.; drlg. 3,710 ft.

Bay Oil Co.'s No. 1 Holden, SW SW SE Sec. 14-28-3.
5-in. 2,945 ft.; drlg. plugs.

J. T. Lindsay's No. 1 Waggoner, NW NW NE Sec. 3-27-1.
Bldg. rig.

KIOWA COUNTY

Henson & Patton's No. 1 Beeler, NE cor. Sec. 11-6-15w.
T.D. 517 ft., lime; S.D.

Henson & Patton's No. 2 Beeler, NW NE NE Sec. 11-6-15w.
Sand 290-315 ft.; T.D.; H.F.W.; S.D.

Rajah Oil Co.'s No. 3 Stone, C SE NE Sec. 34-7-17w.
R.U. machine.

LINCOLN COUNTY

Carter Oil Co. et al's No. 1 McFarland C-38, SW SW NE Sec. 18-13-4.
Drlg. 4,670 ft.

Chester L. Carlock's No. 1 Young, C N½ NW NW Sec. 23-15-5.
R.U. rotary.

Mid-Continent Pet. Corp. et al's No. 1 Nunn, SE SE NW Sec. 25-15-1.
Location.

Stanolind et al's No. 1 Campbell, SW NW Sec. 3-14-3.
Viola lime 4,982 ft.; Simpson Dolomite 5,040 ft.; coring at 5,064 ft.

Stanolind O. & G. Co. and Amerada Pet. Corp.'s No. 1 Cavanaugh, SE NE Sec. 31-15-5.
Drlg. 2,265 ft.

LOGAN COUNTY

Anderson-Kerr et al's No. 1 Renfrow, NE cor. Sec. 33-16-4w.
Checkerboard 5,485 ft.; drlg. 5,525 ft.

Sinclair Prairie and Slick Urschel's No. 1 Koatsch, SW cor. Sec. 23-15-3w.
Second Wilcox 6,322 ft.; T.D. 6,332 ft.; 1,700 ft. of oil in hole in 30 min.

Sinclair Prairie Oil Co. et al's No. 1 School Land, SE cor. Sec. 36-17-1w.
Simpson dense 5,255 ft.; flowed 293 bbls. in 24 hrs.; top sand at 5,285-90 ft., T.D.; H.F.W.; P.B. to 5,266 ft.; flowed 63 bbls. oil and 5 bbls. wtr. in one 10-min. flow; acidized 1,000 gallons and flowed 425 bbls. of oil; completed.

Slick-Urschel et al's No. 1 Pennington, C SW NE Sec. 10-16-1w.
Simpson dolomite 5,534 ft.; Wilcox 5,581 ft.; no show; lost circulation at 5,587 ft.

J. C. Schaffer et al's No. 1 Hammond, SE SE SW Sec. 10-16-4w.
Mississippi lime 6,300 ft.; drlg. 6,470 ft.

Stanolind O. & G. Co. et al's No. 1 Nunn, SE NW Sec. 25-15-1.
R.U. rotary.

MAJOR COUNTY

Indian Territory Illuminating Oil Co. and Continental Oil Co.'s No. 1 Fairview, C E½ SW SE Sec. 32-22-14w.
Rig material.

McCLAIN COUNTY

Anderson & Kerr's No. 1 Newburn, N W8W NE Sec. 24-5-3.
Wilcox sand 2,933 ft.; T.D. 2,941 ft.; show oil; standardizing.

NOBLE COUNTY

Marathon Oil Co.'s No. 1 Gilbert, NE cor. Sec. 24-22-2.
Wilcox sand 4,449 ft.; T.D. 4,480 ft.; flowed 1,793 bbls. in 7 days; may deepen.

Stanolind-Amerada et al's No. 1 Fuller, C SE SW Sec. 34-20-2w.
First Wilcox 5,029-74 ft.; Dolomite 5,074-5,100 ft., T.D.; flow 727 bbls. in 24 hrs.; shot 20 qts. 5,079-81 ft. and swabbed and flowed 267 bbls.; acidizing.

OKFUSKEE COUNTY

Amerada Pet. Corp.'s No. 1 Jaynes, NW NW SW Sec. 20-10-10.
Hunton 3,690 ft.; 10,000,000 ft. of gas at 3,704 ft.; Wilcox sand 3,932 ft.; T.D. 4,025 ft.; 275 ft. wtr. in hole; P.B. to 3,882 ft.; W.O.C.S.

OKLAHOMA COUNTY

W. H. Atkinson et al's No. 1 Reed, NE cor. Sec. 4-12-3w.
First Wilcox 6,854 ft.; show oil; second Wilcox 6,944 ft.; coring.

Gypsy Oil Co.'s No. 1 Shock, NW SW SW Sec. 2-14-3w.
Drlg. 5,085 ft.

(Continued on Page 124)

Oklahoma Production

Estimated daily average production of Oklahoma for the week ended April 27 and for the preceding week follows:

	Barrels	
	Apr. 27	Apr. 20
Allen	8,300	8,550
Asher-West Asher	1,375	1,175
Burbank	8,750	8,750
South Burbank	11,000	11,000
Balance Osage	27,500	27,500
Blackwell	4,800	4,750
Bristow-Slick	9,500	9,500
Chandler	5,600	5,600
Crescent	7,400	7,250
Cromwell	4,500	4,300
Cushing-Shamrock	12,750	12,750
Duncan district	4,250	4,000
Edmond	3,075	1,850
Fish	8,950	12,500
Fitts	13,575	14,175
Gray	2,000	2,050
Graham	3,900	3,800
Healdton	9,250	9,000
Hewitt	4,750	4,750
Holdenville	1,650	1,800
Keokuk	2,200	2,675
Konawa	2,550	2,050
Lucien	10,250	10,175
Marshall-Lovell	1,000	900
Oklahoma City	163,875	176,325
Papoose	1,275	1,275
Polo	3,575	2,950
Saskawa and townsite	2,500	2,300
Sholem Alechem	4,000	4,000
Seminole Field:		
Bowlegs	12,825	12,400
Carr City	7,400	6,500
Earlsboro	10,175	9,800
East Earlsboro	9,525	9,550
South Earlsboro	1,200	1,225
Little River	13,025	13,825
East Little River	900	950
Maud	1,400	1,450
Mission	3,225	3,300
Seminole	11,875	11,750
East Seminole	1,225	1,250
Searight	4,825	3,900
Total Seminole	77,600	75,900
St. Louis-Pearson	24,075	26,550
Tatums	5,000	5,000
Tonkawa-Garber-Thomas	6,000	6,000
Wewoka	3,500	3,500
Yale-Jennings	4,800	4,800
Other pools	57,675	57,675
Total Oklahoma	522,750	537,125

Fitts Pool's Eventful Week

The Fitts Pool in Pontotoc County experienced another eventful week with the bringing in of the largest oil well in that pool to date and the profuse sprinkling of new locations, 18 in all, and all but two of which go to the credit of Ed Moore and associates, the largest holders of acreage in the pool.

The biggest well in the Fitts Pool to date is No. 5 Norris belonging to the Phillips Petroleum Co. and located in the NW SE SW of Section 25-2-6, which extends production one location west. This well logged the Bromide lime at 4,035 feet, first sand at 4,140 feet, second sand at 4,213 feet, and at 4,246 feet, total depth, on April 20 flowed 1,144 bbls. of oil the first hour and flowed 656 bbls. of oil the next half hour, both gauges being through the casing. Its tubing flow was 131 bbls. in 30 minutes and gas is estimated at 12,000,000 feet. It looks like this well actually places the west side of the pool on an equal basis with the east side, which has been considered the most favorable for oil production.

The farthest west test for the Fitts Pool is the W. A. Delaney and others' No. 1 G. Smith, NE SE SE Section 26-2-6, three locations west of the Phillips Petroleum Co.'s No. 5 Norris. The No. 1 Smith logged the Mayes lime at 3,190 feet, Woodford at 3,280 feet, and was reported drilling ahead below the Hunton lime which was topped at 3,495 feet.

On the east side of the Fitts Pool in Pontotoc County, Magnolia Petroleum

Co. had completed for an estimated 50,000,000 feet of gas in the Atoka formation, 1,380-1,955 feet, with total depth at 2,060 feet, its No. 1 Simpson, SW SE NE Section 29-2-7, and same company's No. 2 Simpson, a twin to No. 1, in the SW SE NE Section 29-2-7, had 12-inch pipe cementing at 509 feet.

Moore and associates' No. 1 Mitchell, NW SW NW Section 31-2-7, the only McLish sand producer in the Fitts Pool to date, was completed at a total depth of 4,515 feet, for 1,408 bbls. in four hour flowing through the casing. McLish lime was logged at 4,210 feet, McLish sand at 4,355 to 4,370 feet and 4,405 to 4,515 feet, the big pay coming from 4,405 to 4,415 feet, there being no evidence of an increase of production below 4,415 feet.

Carter Oil Co. had made location for its No. 8 Harden in the NE SE SW Section 30-2-7, and its No. 15 Richards in the NW SW SE Section 30-2-7, both of which were cellars.

Ed. Moore and others were rigging up to deepen their No. 2 Wirick in the NE SE SW Section 29-2-7, which had been completed in the Bromide sand at a total depth of 4,042 feet for a four-hour potential of 1,932 bbls. It was not learned what the intention of the operators is in deepening this well but a guess might be ventured that the McLish sand is the object.

All other new operations in the Fitts Pool of Pontotoc County were started by Ed. Moore and associates and are set out as follows: No. 5 Akers, NE SE NE Section 36-2-6, cellar and pits; No. 6 Akers, NW SE NE Section 36-2-6, cellar and pits; No. 2 Woodruff, NW NE SE Section 29-2-7, cellar and pits; No. 3 Woodruff, NE NW SE Section 29-2-7, cellar and pits; No. 4 Woodruff, NW SE Section 29-2-7, cellar and pits; No. 2 Harper, SE SW NE Section 29-2-7, cellar and pits; No. 4 Showers, SE SW NW Section 29-2-7, cellar and pits; No. 6 Craddock, SE NW SW Section 29-2-7, cellar and pits; No. 7 Craddock, NE SW SW Section 29-2-7, cellar and pits; No. 8 Craddock, SE SW SW Section 29-2-7, cellar and pits; No. 3 Patrick, SW NW NE Section 31-2-7, location; No. 4 Patrick, SE NW NE Section 31-2-7, location; No. 5 Smith, SW NW NW Section 31-2-7, location; No. 6 Smith, SE NW NW Section 31-2-7, location; No. 7 Smith, SW NE NW Section 31-2-7, location; No. 8 Smith, SE NE NW Section 31-2-7, location.

Other Pontotoc Wells

South of the Allen Pool, Radial Oil Co.'s No. 2-A Lee, NE NW NE Section 20-4-8, logged a sand at 1,520-1,528 feet, total depth, which yielded 130 bbls. of oil and 590 bbls. of water on a 24-hour swabbing test. It was plugged back to 1,524 feet where it pumped 65 bbls. of oil and 535 bbls. of water in 24 hours.

Moudwy Oil Co. was spudding in its No. 1 Huddleson, C S half NW NW Section 23-5-8, Allen Pool, in northeastern Pontotoc County.

Osage County Activity

Five oil producers having a combined initial 24-hour production of 456 bbls. were completed in Osage County the past week, and there were two dry holes and eight new operations started.

The Texas Co.'s No. 5 Oliphant, SW SE SE Section 19-25-8, in the Atlantic Pool in Osage County, which originally was a Layton sand producer operated by A. G. Oliphant, was deepened to the Chat formation logged from 2,453 to 2,500 feet, total depth, and finding it void of any production, operator abandoned it.

Geo. Manahan, Gypsy Oil Co. and others had completed their No. 6, SW NW Section 3-25-6, South Burbank Pool in Osage County, for 281 bbls. of oil and a small amount of water, production coming from the Burbank sand drilled from 2,751 to 2,826 feet, total depth.

In the Naval Reserve Pool in Osage County, Continental Oil Co. and Gypsy Oil Co.'s No. 10, SW NE NE Section 21-24-7, had Bartlesville sand at 2,540-2,630 feet, total depth, which was shot with 140 quarts of nitro and produced 434 bbls. in 24 hours flowing time.

About 4 miles northwest of Barnsdall in Osage County, Western American Oil Co. had acidized the Big Lime at 1,449-1,488 feet, total depth, with 1,000 gallons of acid, and it yielded only 4 bbls. of oil daily on the pump. It was a completion.

Finance Oil Co.'s No. 1 in the W half E half SW Section 19-23-8, Manion Pool in Osage County, was cleaned out to 2,482 feet and plugged back to 2,480 feet, and it pumped 8 bbls. of oil daily.

E. O. Platter's No. 5, NE SE NW Section 30-22-9, Osage County, found a shallow sand at 412-432 feet, total depth, which pumped 3 bbls. of oil in 24 hours on its completed gauge.

Kewanee Oil & Gas Co. at its No. 12 in the SE NE NE Section 5-22-11, Avant district of Osage County, had plugged back from 1,727 feet to 1,181 feet in the Big Lime, where a 1,000-gallon shot of acid resulted in 7½ bbls. of oil daily on the pump.

In the Hominy Falls Pool in Osage County, J. W. Fields' No. 1-A, NW NE SE Section 11-21-11, logged dry Wilcox sand from 2,223-2,268 feet, and the test was abandoned at 2,295 feet, total depth.

Osage County First Reports

First reports in Osage County for the past week follow: Lewis Production Co.'s No. 1, C N half N half SW Section 24-27-11, location; J. H. Alexander's No. 4, NW SW SW Section 36-25-11, location; J. H. Alexander's No. 3, C E half E half SE Section 35-25-11, location; Lewis Production Co.'s No. 7 Mullendore "B," SW NE NW Section 21-24-7, cellar; Lewis Production Co. and Continental Oil Co.'s No. 10, NW SE SW Section 16-24-7, cellar; Johnson Refining Co.'s No. 13, NW NE SE Section 30-21-9, location; Barnsdalle Oil Corp.'s No. 27, 410 feet north and 600 feet east of center Section 30-21-9, location.

NORTHERN AND CENTRAL OKLAHOMA

Kay County

Harris & Haun's No. 1 Schussler, Kay County wildcat in the C NW SW Section 3-28-2, logged Mississippi lime at 3,614 feet, Wilcox sand at 3,933 feet and was drilling at 3,940 feet in dry sand with no showing of oil.

Wentz Oil Corp.'s No. 4 Herman, C NW NW Section 8-28-1, northern Kay County, Dilworth Pool, swabbed 80 bbls. of oil in 24 hours from Wilcox sand at 3,402-07 feet, total depth, after a 5-quart shot of nitro. It was completed.

The Texas Co.'s No. 1 Curtis, NW NE Section 23-28-3, offsetting to the south the recent Skinner sand discovery of Bay Oil Co., was a failure in the Skinner sand and sent on down it tested dry Bartlesville sand at 3,080 feet and finally abandoned at 3,158 feet, 28 feet in Chat formation topped at 3,130 feet.

In the same spot in Kay County, Bay Oil Co.'s No. 1 Curtis, NE NW Section 23-28-3, a southwest offset to the same company's Skinner sand producer, No. 1 Hudson, encountered only a small show of oil in that horizon and the Bartlesville sand and it was dry and abandoned at 3,184 feet, total depth, 48 feet in Mississippi lime topped at 3,136 feet.

Noble County

Stanolind Oil & Gas Co. and Amerada Petroleum Corp.'s No. 1 Fuller, C SE SW Section 34-20-2w, Lucien Pool extension well, had Wilcox sand at 5,029 to 5,074 feet; Dolomite 5,074 to 5,100 feet, total depth, where it flowed 50 bbls. of oil per hour, big part of production coming from the Dolomite. It was shot with 20 quarts of nitro and quit flowing regular, swabbing and flowing about 267 bbls. daily. The test was then acidized with 1,000 gallons, shut in for three days, and when opened up, flowed 1,320 bbls. of oil in six hours, the last hour's gauge being 200 bbls.

The Atlantic Oil Producing Co.'s No. 1 Porter, one-half mile north of the Polo Pool in Noble County, encountered a good show of oil in Simpson Dolomite from

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4,910 to 4,934 feet, total depth, and 7-inch casing was being run to make a production test.

Mid-Co Oil Co. was digging cellar for No. 1-A Yost, 400 feet south and 800 feet east of the NW cor. NE Section 22-23-2w, Billings Pool in Noble County.

Stanolind Oil & Gas Co. had location staked in the SW SE NW Section 27-22-2w, Polo Pool in Noble County, for its No. 6 DeVore.

Logan County

Mid-Continent Petroleum Corp. had completed its No. 1 Campbell, C SE NE Section 33-17-4w, Crescent Pool in Logan County, in the second Wilcox sand 6,178-6,223 feet, total depth, for 1,100 bbls. in 11 hours.

Carter Oil Co. was preparing to test second Wilcox sand at 6,336-6,350 feet, total depth, at its No. 3 Herren, NW NE Section 28-17-4w, Crescent Pool in Logan County, which carried a slight showing of oil.

Anderson & Kerr and others' No. 1 Renfrow, wildcat test in the NE cor. Section 33-16-4w, about 12 miles southwest of Guthrie in Logan County, had logged Checkerboard lime at 5,485 feet and was drilling below 5,530 feet.

In the Langston Pool in Logan County, Helmerich & Payne Drilling Co. and Gypsy Oil Co. had logged Chattanooga shale at 4,880 feet, Misener sand at 4,910 feet, Hunton lime 4,927 feet, Sylvan shale, 4,973 feet. Viola lime at 5,045 feet, and at 5,075 feet, total depth, were ready to drill plug after setting 7-inch casing at 5,065 feet.

J. C. Shaffer's No. 1 Hammond, wildcat in the SE SW Section 10-15-4w, about 12 miles southwest of Guthrie in Logan County, had logged the Mississippi lime at 6,300 feet and was drilling ahead below 6,470 feet.

In the south end of the Crescent Pool in Logan County, Carter Oil Co. at its No. 1 Mark Herren had topped Layton sand at 5,060 feet and was coring in it at 5,077 feet.

Texas Co.'s No. 1 Denny, SE cor. Section 33-17-4w, Crescent Pool in Logan County, originally a producer in the first Wilcox sand, had been deepened to the second Wilcox sand, logging top of that zone at 6,195 feet, and it was drilling ahead at 6,200 feet with no increase in production.

Oklahoma County

W. H. Atkinson and associates' No. 1 Reed, a wildcat in Oklahoma County, in the NE cor. Section 4-12-3w, had logged first Wilcox sand at 6,854 feet, getting a show of oil at 6,859 feet, and second Wilcox sand at 6,944 feet to 6,954 feet, total depth, where a salty core was removed. A geophone test was to be made.

Slick-Urschel and associates at No. 1 Owen, SE cor. Section 19-13-3w, northwest of Britton in Oklahoma County, were drilling at 1,810 feet. This is a wildcat test in a very interesting location.

In the same area Sinclair Prairie Oil & Gas Co. was reaming down the hole at No. 1 Corbett, another Oklahoma County wildcat near Britton, total depth was 355 feet.

Edmond Pool

Mid-Continent Petroleum Corp.'s No. 3 Young, SW SE NE Section 31-14-3w, Edmond Pool in Oklahoma County, was drilling around 4,400 feet, and same company's No. 4 Young, NW SW NE Section 31-14-3w, was shut down waiting on cement to set around 13⅜-inch casing set at 600 feet.

Continental Oil Co.'s No. 2 Young, was a new operation in the Edmond Pool in Oklahoma County, same being located in the NE SE NW Section 31-14-3w, where the derrick was being built.

Derrick was being built in the SE SW Section 30-14-3w, Edmond Pool, for Pure Oil Co.'s No. 1 Mulm.

Slick-Urschel Oil Co.'s No. 1 Suenram, NE NW NE Section 6-13-3w, Edmond Pool in Oklahoma County, was drilling below 4,850 feet.

Marathon Oil Co.'s No. 1 Dahl-Account No. 2, NE SW Section 31-14-3w, Edmond Pool in Oklahoma County, was drilling at 3,600 feet and reported running slightly higher on the Pawhuska lime topped at 3,340 feet than the east offset.

Lincoln County

Carter Oil Co. and others' No. 1 McFarland, SW NE Section 18-13-4, Lincoln County wildcat south of the Chandler Pool, has logged Mayes lime at 4,475 feet and was drilling in that formation at 4,819 feet.

Lying between the West Chandler Pool and Sinclair Prairie Oil & Gas Co.'s No. 1 Hoyt, recent discovery in Lincoln County, the Stanolind Oil & Gas Co. and Amerada Petroleum Corp.'s No. 1 Campbell, wildcat in the SW NW Section 3-14-3, had logged Viola lime at 4,982 feet, Simpson dense at 5,030 feet, Dolomite at 5,040 feet, and were rigging up cable tools at 5,064 feet, total depth, after setting 7-inch casing on top of the Viola lime. The favorable position of the Viola lime and Simpson formations indicates that this test has a good chance of making a producer.

Stanolind Oil & Gas Co. and Amerada Petroleum Corp. were drilling below 2,270 feet in their No. 1 Cavanaugh, SE NE Section 31-15-5, Lincoln County wildcat northeast of Chandler.

The Texas Co. had staked location and was rigging up rotary tools in the SW NE SE Section 33-14-4, Lincoln County, Gessman Pool for its No. 3 Hoover.

Okfuskee County

Probably the greatest excitement for some time for Okfuskee County, was caused by news emanating from parts thereabouts concerning the purported large producing oil well in the Wilcox sand in the old Weleetka area of that county. News was flashed abroad that the Olean Petroleum Co. of Bristow, Okla., at its No. 3 Fish, SE NE NW Section 36-10-11, an old well deepened from 3,209 feet in the Cromwell sand, had encountered oil production in large quantities in the Wilcox sand logged at 3,492 feet and penetrated to 3,961 feet, total depth. It was erroneously reported as making around 100 bbls. per hour of high gravity oil. A correct accounting of the record of production from the well, however, is that it produced 43 bbls. of oil the first 24 hours of 54 gravity.

The last production record available for publication was that it was spraying 31 bbls. of oil and 33 bbls. of water daily. An effort was to be made to shut off the water production.

Pottawatomie County

Stanolind Oil & Gas Co. and Amerada Petroleum Corp.'s No. 1 Sauter, NE SE Section 31-11-4, northwest of the Shawnee Pool in Pottawatomie Pool, had, in a small way, extended production of the Shawnee Pool about 1 mile northwest. Earlsboro sand at 4,386-4,405 feet was good for 60 bbls. of oil and 18 bbls. of water in 24 hours on the pump. This test cored the Earlsboro sand on the way down to the Wilcox sand and indicated oil showings in the cores. It was found to be dry in both the first and second Wilcox sands, logged at 5,470 feet and 5,552-62 feet, total depth, respectively, and was then plugged back to the Earlsboro sand where it made a small well.

In the Grisso Pool in Pottawatomie County, Amerada Petroleum Corp. had completed its No. 1 Brooks, C NW SW Section 2-8-4, in the Hunton lime at 4,053-4,137 feet, total depth, for 17 bbls. of oil on the pump in 24 hours. It was plugged back from 4,137 feet to 4,132 feet.

Seminole County

Champlin Refining Co. at its No. 7 See (Twin to No. 4) in the CEL SW NE SE Section 30-7-8, South Fish Pool in Seminole County, found Wilcox sand from 4,215-4,225 feet, total depth, which on its completed gauge flowed 3,120 bbls. in 24 hours.

In the same pool, Champlin Refining Co.'s No. 1 See, deepened from the Wapanucka-Cromwell horizon to the Wilcox sand at 4,181-83 feet, total depth, found the latter horizon good for 2,545 bbls. in 24 hours. It was completed.

Atlantic Oil Producing Co. and Wof-

ford Drilling Co. and others' No. 1 Thomas, NW SE Section 8-6-7, Wilcox sand discovery of last week, had been officially completed in that horizon for 1,120 bbls. of 40 gravity oil in 24 hours. This test is situated between the Sasakwa and Konawa Pool in Seminole County and Wilcox sand was recorded from 3,945 to 3,950 feet, total depth.

In the southeast corner of the St. Louis Pool in Seminole County, Westgate Oil Co.'s No. 3 (twin) Schrader, 405 feet south and 990 feet east of the NW cor. NE Section 6-6-5, swabbed 1,008 bbls. on a 48-hour production test, Simpson Dolomite at 3,965 to 4,038 feet, total depth, yielding that amount after a 1,200-gallon acid shot.

Same operator's No. 1 Schrader, 330 feet south and 1,054 feet east of the NW cor. NE Section 6-6-5, Seminole County, produced 2,790 bbls. in 48 hours on the swab from Wilcox sand drilled from 4,177-4,181 feet, total depth. It was a completion of an old well formerly bottomed at 4,100 feet.

Carter Oil Co. was drilling at 3,198 feet in its No. 1 Alexander, C W half SW NE Section 14-10-6, South Keokuk Pool in Seminole County.

Magnolia Petroleum Co. was drilling below 3,000 feet in its No. 1 Brown, C E half SE NW Section 14-10-6, South Keokuk Pool in Seminole County.

New operations in Seminole County starting up during the past week follow: Turman Oil Co.'s No. 3 Jones, NW SE NE Section 34-9-6, formerly bottomed at 4,215 feet in First Wilcox sand, was deepened and found base of first Wilcox at 4,220 feet, logged second Wilcox sand at 4,268 to 4,292 feet, total depth, and was being cleaned out after a 60-quart shot from 4,262 to 4,290 feet. Barnsdall Oil Corp.'s No. 1 J. Willmott, NE SW Section 15-8-5, southwest of the Carr City Pool, was a rig. Winona Oil Co., Jarvis and Holmes' No. 5 Myers, SW NE Section 31-7-8, Fish Pool in Seminole County, was building rig.

Pottawatomie County Wildcat

Howard Sherman and associates' wildcat north of the Earlsboro Pool in Pottawatomie County, No. 1 Wingo, NE NW SE Section 32-10-5, was reported to have found salt water in the Wilcox sand at 4,389 to 4,390 feet, total depth, the top of the sand being logged at 4,374 feet. It will probably be plugged back to the Simpson Dolomite where a good show of oil was had.

SOUTHWESTERN AND SOUTHERN OKLAHOMA

Altus Area

Jackson County is scheduled for a deep test if plans materialize, according to reports regarding Golding and Cochran's No. 1 Duncan, NE cor. Section 34-2-21w, which was to the effect that operators contemplate a 3,000-foot depth for the well. Twelve hundred feet of water was had in Granite wash at 2,380-95 feet and the bit was already below 2,500 feet.

Manson Oil Co. and other's No. 1 Minor, NW NE NE Section 15-1-20w, Jackson County, had encountered Granite wash at 1,319 feet and at 1 foot in was making an estimated 2,000,000 feet of gas and spraying a small amount of oil.

Comanche County

Ashcraft and Palmer's No. 2 Noble, SE NW Section 28-2-10w, Lawton district in Comanche County, was completed for 3 bbls. of oil daily on the pump, production coming from a sand at 455 to 463 feet, total depth.

Stephens County

L. B. Simmons' No. 1 Glaze, SW NW Section 16-1-8w, Duncan district in Stephens County, logged gas sands at 2,350-2,372 feet, 2,376-2,380 feet and 2,401 to 2,417 feet, total depth, and it was completed for 7,000,000 feet of gas.

Lish Brothers' No. 3 Crosbie, SE SW SW Section 23-1s-5w, Stephens County, was completed in sand at 665 to 690 feet, total depth, for 6 bbls. of oil daily on the pump.

Louis Sikes' No. 9 Franklin, NW SE SE Section 18-1s-8w, Duncan district in Stephens County, was a new operation for the week, and it was shut down at 20 feet waiting on surface pipe to set.

Jefferson County

Farlyn Oil Co. was drilling at 875 feet in its No. 31 Seay, SW SE NW SE Section 3-7s-5w, a new operation for the week in the Oscar Pool in southeastern Jefferson County.

Carter County

In the Wildcat Jim Pool in Carter County, Cox and Hamon had plugged back from 2,257 feet to 2,162 feet in their No. 1 Farm fee, SW SE NE Section 17-2-2w, and sands from 1,926 to 2,162 feet produced an average of 104 bbls. of 29 gravity oil daily on a four-day test. It was a completion for the week.

Ben G. Barnett and others had abandoned location for their No. 2 Lynn, SE NW NE Section 31-1s-2w, Tatum Pool in Carter County.

Eggleston and others' No. 1-A Dillingham, NE SE SE Section 8-1s-2w, Carter County, was dry and abandoned at 320 feet, total depth. A small show of oil was had in sand at 292 to 320 feet.

New work in Carter County during the past week was: Shell Petroleum Corp.'s No. 49 Franklin, 570 feet south and 1,075 feet east of the NW cor. NE Section 8-4s-3w, Healdton Pool, sand 905 to 907 feet, shut down for cement to set around 7-inch casing at 897 feet. Same company's No. 48 Franklin, 390 feet south and 490 feet west of NE cor. Section 8-4s-3w, sand 932 to 940 feet, total depth, shut down with 7-inch casing cementing at 932 feet.

Marshall County

J. S. Batson's No. 1 Lynn, 165 feet south and 825 feet east of NW cor. Section 36-7s-5e, Marshall County, was abandoned at 160 feet.

Marshall County first reports follow: Mitchell & Kilburn's No. 7 Burge, SE cor. Section 25-7s-5, drilling with machine at 210 feet. Headington and others were rigging up machine for their No. 2 Snell, SW NE NE SE Section 36-7s-5.

Wildcat in Atoka County Fails

H. F. Potts' No. 1 Nichols, SW NW Section 32-2s-9, a closely watched wildcat test in Atoka County, encountered a hole full of sulphur water in the McLish sand and it was abandoned at 2,710 feet, total depth. Bromide lime was logged at 2,045 feet, McLish at 2,406 feet, small show of oil at 2,510 to 2,517 feet, and sand at 2,621 feet produced sulphur water.

Kansas Fields

(Continued from Page 100)

Dickey Oil Co. and Indian Territory Illuminating Oil Co.'s No. 2 J. Baughman, NW NE Section 3-24-4w, south end of the Haury-Burrton Pool in Reno County, logged Hunton lime from 3,591-3,599 feet, total depth, which put 1,300 bbls. of oil in the tanks in 24 hours on the pump. It was completed.

Chase County

Polhamus and others' No. 4 Leady, NE SE NW Section 25-22-9e, was a machine on location. This test is in the old Teeter-Pixley district in the extreme southeast corner of Chase County.

Greenwood County

Oko Oil Co.'s No. 5 Livett-McNeill, NW NE SW Section 22-23-13e, Greenwood County, had been acidized with 1,000 gallons of acid and was shut down. This well and lease was formerly owned by the Darby Petroleum Co. and the Oko Oil Co. has taken it over, evidently with the intention of deepening the wells to the lime horizon which will be acidized. The No. 5 well, formerly bottomed at 1,645 feet, was deepened to 1,747 feet, 19 feet in a lime formation, at which depth, the hole filled 450 feet with oil.

South of the Madison Pool in Greenwood County, Mullendore and others were drilling at 400 feet in their No. 1 Pedroje, NE SW Section 14-23-11e, a wildcat test.

Woodson County

Gates Oil Co. had started spudding operations at its No. 10 Kimball, SE NW NW Section 18-24-14, western Woodson County, Virgil district.

Foster and Schultz' wildcat, No. 1 Ferguson, C S half NE SW Section 12-26-13, western Woodson County, was drilling at 1,200 feet.

Cowley County

Connell and Patton's No. 1-A Higginbottom, SW NW SW Section 29-31-6, Burden Pool in Cowley County, encountered a sand at 2,878-2,942 feet, total depth, which put 2,000 feet of oil in the hole. It was shot with 95 quarts of nitro and pumped 150 bbls. of oil in 24 hours for its completion gauge.

Lloyd, Frost and Study's wildcat, No. 1 Weathered, SW SE SE Section 28-31-3, Cowley County, topped the Stalnaker sand at 2,089 feet, and at 2,126 feet had an estimated 24 bbls. of oil a day but got a hole full of water at 2,140-50 feet, and it was being drilled deeper.

Rooks County

North of the Kruse Pool in southeastern Rooks County, the wildcat test of Stearns, Streeter and others' No. 1 Hoskins, SE SW SE Section 34-9-16w, is reported to have logged the Siliceous lime at 3,355 feet, getting a hole full of water at 3,452 feet and drilling ahead at 3,525 feet.

Trego County

Southwest of Wakeeney in Trego County, Jenmar Oil Co.'s No. 1 Jones, wildcat in the SE cor. Section 20-12-23w, had drilled cement plug after setting 7-inch casing at 3,861 feet in Oswald topped at 3,790 feet, getting a small show of oil and water. It was shut down at 3,890 feet, where it will be acidized.

ELOF BENSON DIES

HOUSTON, Tex., Apr. 29.—Elof Benson, consulting geologist of Houston, died in a Houston hospital from injuries he received in an automobile accident on the Alvin Highway.

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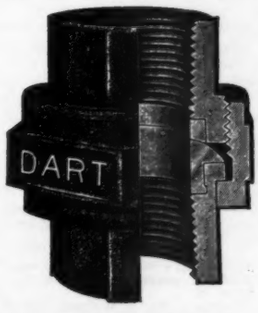

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Results in North Louisiana-Arkansas Delayed by Unusual Number of Shut Down Operations

By J. R. CRUMPTON
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Apr. 29.—For some unknown reason there were more rigs reported shut down in this division during the past week than in any other week in several months. This status, coupled with only six completions and eight new locations in three states, resulted in little news of interest to the oil and gas industry in this territory. However, most of the shutdowns were temporary, and drilling activity is expected to resume its natural trend during the next 10 days.

NORTH LOUISIANA

Of the four new locations staked in this district, only one was a rank wildcat. O. G. Collins and others have staked their No. 1 Hunt in approximately the center of Section 26-22-13e, in East Carroll Parish. As stated a few weeks ago, this test is located in the northeastern part of this State on the west side of the Mississippi River from a recent wildcat drilled in Issequena County. An interesting test in the northwestern part of Bienville Parish, M. V. Duncan and others' No. 2 Hutton, Section 4-18-7, has spudded in and set surface casing at 140 feet. This second test on a block of approximately 10,000 acres is about one-half mile south of No. 1 Hutton which was abandoned as dry in the latter part of January at 3,350 feet. Since abandoning the first well a series of core tests have been drilled over the block to spot the base of the Cane River and establish a high in that vicinity. The No. 1 well topped the Saratoga chalk at 2,240 feet and the Blossom at 2,800 feet, and developed several good shows in the Blossom sand and to the bottom of the hole. Numerous wildcats have been drilled in this vicinity, primarily in search of Blossom production, but the block on which operations are now active, seems to be the highest geologically of any of the areas yet explored.

In Natchitoches Parish, Clyde Crichton's No. 1 Friedman estate, Section 52-7-6, in washing to the bottom after being shut down for more than a month, developed a good show of oil 300 feet off the bottom at 2,934 feet. The operators think that the oil is coming from 2,235-45 feet, but at this writing no determination has been made of it or what steps will be taken to test the show. In the northern part of Bossier Parish, Plain Dealing Syndicate's No. 1-A Bollinger, Section 31-23-12, logged the top of the Nacatoch at 1,822 feet and drilled ahead for the Blossom. A drill stem test from 2,741-71 feet was dry and from 2,751-79 feet developed only a slight show of oil. The test is now shut down at 2,779 feet. Two new wells in the Sligo gas area of Bossier Parish spudded in during the past week. Triangle Drilling Co., original discoverer of deep production in that area, has set 12½-inch surface casing at 218 feet and drilling at 1,710 feet on No. 1-A State of Louisiana. United Gas Public Service Co.'s No. 1-A R. V. Kerr Unit, Section 24-17-12, set 13⅜-inch at 206 feet and drilling at 2,451 feet. It is not known at this writing whether either or both of these wells will be drilled to the upper Trinity around the 4,300-foot level or test some of the numerous upper sands. A second test in East Carroll Parish which has been spudded in for several months, Century Oil & Drilling Co.'s No. 1 Olive Dell, Section 56-21-12e, has resumed drilling and set 10-inch surface at 280 feet. Madison Parish is another area in the northeastern part of the State to become active with two wildcats. Frazier and others' No. 1 Frazier, Section 23-17-10e, is temporarily shut down at 3,018 feet, and Southern Land & Exploration Co.'s No. 1 Delta Land Co., Section 1-17-12e, has derrick pattern on location. A wildcat in Morehouse Parish, Alex Rice, trustee's No. 1 Myers, Section 15-22-7e, is drilling at 300 feet.

The three completions in the North Louisiana district were all small oil wells in widely separated fields. In the Caddo Field, Caddo Parish, the Texas Co.'s No. 3 School fee, Section 16-20-15, is pumping 15 bbls. of oil and 5 bbls. of salt water from 2,230 feet. Monroe Production Co.'s No. 1 Winberry, Section 18-10-2e, in the Urania area of LaSalle Parish, is pumping 30 bbls. of oil and 700 bbls. of salt water from 1,519 feet. In the Converse Field of Sabine Parish, Whithurst-Lee and others' No. 1 Whitney Corp., Section 3-9-13, is also a mixed production with 12 bbls. of oil and 300 bbls. of salt water from the base of the chalk at 1,956 feet.

ARKANSAS

This district reported three new locations, all in wildcat territory. In Calhoun County, the Hunter Co., of Shreveport, has staked location for its No. 1 Stout Lumber Co., in Section 33-16-13. The test is located on a block of about 3,500 acres and is contracted to drill a 4,000-foot hole. W. E. Neill and H. Winters have set 10-inch surface casing at 100 feet and temporarily shut down at 1,710 feet on No. 1 R. W. Cooper, in Section 26-6-15, in Grant County. Lafayette County, one of the most active wildcat spots in South Arkansas, reports a new operation. Larry Romine is moving in rig on his No. 1 Nolte, in Section 11-19-26. Two other wildcats are actively drilling in Lafayette County. Transportation Petroleum Co.'s No. 1 Red River Lumber Co., Section 26-19-25, is drilling at 3,300 feet. Riggs Brothers' No. 1 J. W. Dubose, Section 35-15-24, will continue operations, though it was reported last week that the test would be abandoned at 2,000 feet because of litigation.

A wildcat north of the Miller County Field, Miller County, King Oil Corp.'s No. 1 E. G. Anderson, Section 16-14-27, reports a show of oil at several different depths from 1,995-2,212 feet. It is reported that a 6-foot core of oil sand was cut. On the flank of the proven area, Lee Timberlake's No. 1 Frost estate, Section 27-15-26, has resumed drilling and is coring at 3,080 feet. This well was reported abandoned last week after coring salt water sand at 2,993 feet. In Sevier County, Pendleton & Vaughn's No. 1 Harrison estate, is drilling 6-inch plug with cable tools at 1,153 feet. One of the two deep tests in the Union County proven areas was probably condemned as a possible producer during last week's drilling. H. L. Hunt, Inc.'s No. 15 E. F. Gregory, Section 10-17-14, topped rock salt at 6,815 feet and is shut down in salt at 6,911 feet. This is about a repetition of Lion Oil Refining Co.'s No. 1 Hayes, a deep test drilled about two years ago in the Smackover Field, abandoned at 7,255 feet after penetrating rock salt about 1,400 feet. Gulf Refining Co.'s No. 49 Lewis Werner, Section 5-16-16, Smackover area, is drilling in red and gray sand at 5,165 feet.

Duluth-Arkansas Oil Co.'s No. 4 Beck, Section 34-15-26, Miller County Field, was completed pumping 25 bbls. daily from 2,941 feet. The only other completion in this district was J. E. Crosbie, Inc.'s No. 1-B W. E. Gregory, Section 15-17-14, Rainbow Field, Union County, which was abandoned as salt water in red shale at 3,503 feet.

MISSISSIPPI

This district continues to show little activity. One completion was reported from the Hinds County area of the Jackson gas field. Bob Weaver's No. 1 Trussell & O'Parker, Section 26-6n-1e, had an estimated initial open flow of 35,000,000 feet of dry gas from 2,472 feet. One new location was listed from this area by the same operators. In Simpson County, Berry Corp. will deepen its No. 2 R. T. Berry, in Section 33-2n-4e, and is drilling at 2,375 feet. The test was abandoned as dry the latter part of last December at 2,091 feet. All of the wildcats are shut down for various causes. H. W. Elliott and others' No. 2 R. L. Parker, Section 14-14n-1e, is shut down on account of high water at 1,600 feet after setting 4½-inch casing at that depth. Jack Vale and others' No. 1 Moody, Section 3-13n-14e, is shut down waiting orders at 1,320 feet.

ALABAMA

Covington County's wildcat test, Geometer Production Corp.'s No. 1 A. B. Culbreath, Section 8-2n-14e, is the only active test in the state and is drilling in Eutaw formation at 4,800 feet. It is reported that DeSoto Oil & Gas Corp.'s No. 1 Gardner, Section 22-15s-16w, is arranging to resume drilling from 4,182 feet, after an extended shutdown.

Estimated Production

Estimated daily gross production, all companies, week ending April 27:

NORTH LOUISIANA

	Bbls.
Bellevue	720
Caddo, light	4,930
Caddo, heavy	2,015
Converse	1,000
Cotton Valley	455
DeSoto and Red River	1,410
Elm Grove	425
Haynesville	3,545
Holly	150
Homer	2,690
Pleasant Hill	185
Sarepta-Carterville	525
Urania	3,060
Zwolle	1,780
Total	22,890

SOUTH ARKANSAS

Champagnolle	2,400
El Dorado	2,195
Lisbon	310
Miller County	1,530
Nevada	895
Smackover, light	2,290
Smackover, heavy	18,000
Stephens	600
Urbana	2,005
Total	30,225

Wildcat Operations in Louisiana-Arkansas

(Rotary operations unless otherwise designated)

NORTH LOUISIANA
AVOYELLES PARISH

Bell Oil Co.'s No. 2 Thompson-Koltz, 450 ft. S, 350 ft. E, NW cor. Sec. 11-2n-5e.
Drlg. 3,756.

Southern Star Pet. Co.'s No. 1 O. G. Boyette, Sec. 28-3-5e.
S.D. for high wtr. 3,875 ft.

BIENVILLE PARISH

M. V. Duncan et al's No. 2 Hutton, 200 ft. S, 300 ft. E, NW cor. NE SW Sec. 4-18-7.
Drlg. 50 ft.

Saline Drlg. Co.'s No. 1 Pardee, Sec. 27-14-6.
S.D. 3,819 ft.; steel line measurement.

BOSSIER PARISH

W. A. Kirkland's No. 1 Jarrett & McKeller, 330 ft. N and W, S cor. NW NW Sec. 3-21-13.
S.D. 1,700 ft.

Leonard Co.'s No. 1 Pearson, 250 ft. S and E of C Sec. 22-21-14.
Drlg. 2,640 ft.

Plain Dealing Synd.'s No. 1-A Bollinger, Sec. 31-23-12, 330 ft. N and E SW cor. SE NW.
S.D. 2,779 ft.

Richplane Oil Co.'s No. 1-A S. H. Bollinger, Sec. 22-22-13.
Set 10-in. 40 ft.

Scott & Howard's No. 1 Sherrill, Sec. 13-19-12.
Partly rigged up and S.D.

R. L. Skidmore et al's No. 1 Davis, Sec. 12-18-13.
S.D. 1,150 ft.

Triangle Drlg. Co.'s No. 1-A State of La., Sec. 23-17-12, 1,000 ft. E, 2,640 ft. S, NW cor.
Set 12½-in. 218 ft.; drlg. 1,710 ft.

United Gas Pub. Serv. Co.'s No. 1-A R. V. Kerr Unit, NE cor. Sec. 24-17-12.
Set 13⅜-in. 206 ft.; drlg. 2,451 ft.

CADDO PARISH

Alaska Oil Corp.'s No. 1 Dickerson, 150 ft. N and E, SW cor. NW NW.
S.D. 1,500 ft.

Ark.-La. Gas Co.'s No. 2 Rodessa, O. & Devel. Co., Sec. 23-23-16.
Comp.; gauged 5,650,000 ft. of gas, 5,869 ft.

Nick Babare's No. 1 Gibbs, Sec. 16-20-15.
Set 10-in. 50 ft.

J. Ed Bailey, tr.'s No. 1 Hartzo, NW cor. NE NW Sec. 28-22-16.
S.D. 1,236 ft.

Barnsdale Oil Corp.'s No. 1 School fee, NE cor. NW SE Sec. 16-20-15.
Coring 2,165 ft.

W. T. Bell et al's No. 1 Bostick, 1,320 ft. E, 660 ft. N SW cor. Sec. 12-22-16.
Tested S.W.; S.D.; W.O. 2,785 ft.

Cal-La. Devel. Co.'s No. 1 Glassell, NW NE Sec. 11-19-15.
Set. 10-in. 40 ft.

Roy C. Golsen's No. 1 Thigpen & Herald. 785 ft. E, 379 ft. S, NW cor. SW Sec. 15-20-15.
Set 10-in. 62 ft.; drlg. 2,120 ft.

Gulf Ref. Co.'s No. 4 Caddo Levee Board, 772 ft. S, 200 ft. E, C Sec. 10-20-16.
Shot 7-in. 1,490 ft.; arranging to pull csg. and reset; old T.D. 1,799 ft.

Hillman et al's No. 1 J. S. Noel Est., NE NE Sec. 12-20-16.
Set 10-in. 21 ft.

A. D. King, tr.'s No. 1 Roach, 641 ft. E. 375 ft. N, SW cor. SE Sec. 4-14-16.
S.D. 2,128 ft.

Murray Oil Co.'s No. 1 J. S. Noel, 298 ft. S, 200 ft. E, NW cor. SW Sec. 15-20-15.
Set 6-in. 2,164 ft.; T.D. 2,191 ft.

Press & Lambert's No. 1 Robertson, 300 ft. N and E, SW cor. SE Sec. 15-20-15.
W.O.S.R. 2,202 ft.

Recovery Oil Co.'s No. 1 W. L. Sibley, Sec. 15-19-14.
Arranging to set csg. 2,448 ft.

A. C. Scott et al's No. 1 Noel Est., 330 ft. S and E, NW cor. Sec. 22-20-15.
W.O.S.R. 2,261 ft.

Shreveport Oil Corp.'s No. 5-B Muslow, 150 ft. S, 1,320 ft. E, NW cor. Sec. 9-20-1a.
Drlg. 2,140 ft.

Simplex Oil Co.'s No. 1 Keeth, 660 ft. N and E, SW cor. SE Sec. 18-20-14.
Rigging up.

G. R. Stevens' No 2 Hart, Sec. 22-21-16.
S.W. and abd. 1,023 ft.

A. F. Tarver's No. 1 George, 330 ft. N and E, SW cor. NE NE Sec. 23-19-15.
Rigging up.

Texas Co.'s No. 3 School fee, Sec. 16-20-15.
Comp.; pumping 15 bbls. 2,230 ft.

Texas Co.'s No. 4 School fee, Sec. 16-20-15.
Set 6-in. 2,159 ft.

Texas Co.'s No. 2 Thigpen, 300 ft. S and E, C Sec. 15-20-1s.
Set 6-in. 2,182 ft.

Leonard Co.'s No. 1 Kuhn, C N½ NW SW Sec. 7-20-15.
Drlg. 50 ft.

CATAHOULA PARISH

Geo. J. Phillips' No. 1 La.-Central Lbr. Co., 127 ft. N, 2,490 ft. W, SE cor. Sec. 2-9-6e.
Drlg. 818 ft.

CLAIBORNE PARISH

E. T. Oakes' No. 1 H. W. Patton Est., 660 ft. S and W, NE cor. Sec. 1-20-5w.
Partly rigged up and S.D.

DESOTO PARISH

E. B. Bird et al's No. 1 J. H. Johns, 330 ft. N and W, center Sec. 20-14-6.
S.D. 2,630 ft.

W. T. Coleman's No. 1 Walker, 330 ft. N, 660 ft. W, SE cor. SE SW Sec. 18-12-11.
Rigging up.

G. O. Collins' No. 1 J. H. Riggs, 450 ft. S and W, NE cor. SW Sec. 21-14-13.
Set 10-in. 40 ft.

(Continued on Page 121)

Seven Locations in Lea County, New Mexico; Quealy Dome and Byron Have Producers

By TOLBERT R. INGRAM
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Apr. 29.—Six completions and seven new locations were reported in Lea County, New Mexico. Noble & Co.'s No. 3-C State, which proves up one 40-acre unit on the northwest of the Hobbs Pool, gauged 14,414 bbls. of oil and 14,400,000 feet of gas after acidizing. Shell Petroleum Corp.'s No. 1 Turner, a near completion, made 236 bbls. the first hour through the tubing. Two completions in the Cooper Pool were Texas Co.'s No. 6 Ogg for 417 bbls. in five and one-half hours and Phillips Petroleum Co.'s No. 15 Woolworth for 32 bbls. an hour. Southern Petroleum Exploration Co.'s No. 1-B Ascarate, in the Jal Pool, made 30 bbls. an hour. Continental Oil Co.'s No. 20-C-3 State, in the Eunice Pool, made 105 bbls. an hour and its No. 9-B-2 Meyers, which proves up one unit, made 50 bbls. an hour. In Eddy County, Grayburg Oil Co.'s No. 6 Burch flowed 341 bbls. in 24 hours past lost tools which were blown up the hole.

Stanolind Oil & Gas Co.'s No. 28-X Parkinson, on the Iles Dome, in Colorado, is a near completion in the Sundance. McElmo Oil Co.'s No. 1 West, in Montezuma County, has 1,200 feet of oil in the hole through cavings, the hole being open for 1,400 feet.

In Wyoming, California Co.'s No. 1 Holst, Quealy Dome, Albany County, is estimated good for 400 bbls. a day from 5 feet of Dakota sand upon deepening from the Muddy, in which it discovered a new pool last fall. Peay Oil Co.'s No. 1 Denio, in a fault block south of the Byron Field in Big Horn County, filled a 250-bbl. tank in 16 hours with 48 gravity oil from the first Wall Creek. Two new locations for Sundance sand wells were reported in Lance Creek. One small pumper was completed in the Osage Field.

Montana reported four new locations in the Cut Bank Field and one small completion in the Kevin-Sunburst Field.

NEW MEXICO

Hobbs Area

Noble & Co.'s No. 3-C State, NE NW SW Section 24-18-37, which proves up one 40-acre unit to the west and south of producing units at the extreme northwestern edge of the Hobbs development, was completed at 4,200 feet for 13,414 bbls. of oil and 14,479,660 feet of gas the first 24 hours from the pay at 4,103-4,200 feet. This record was made after acidizing with 2,000, 4,000 and 6,000 gallons. The 7-inch is at 4,002 feet and 3-inch tubing was run to 4,192 feet. Elevation is 3,677 feet. Before acidizing, it made 95 bbls. an hour.

A new operation which will test out the east flank is Cusack, Inc.'s No. 2 Moon, SW SE NE Section 28-18-38, one-third of a mile east of the firm's No. 1 Moon in the SW cor. NE Section 28, which made 8,435 bbls. initial when completed in February after acidizing. It is building rig.

Repollo Oil Co. is going back into No. 2 Grimes, SW SE NW Section 28-18-38, to drill it deeper. It was completed in December, 1932, at 4,223 feet, failing to flow open and making 551 bbls. initial through the tubing. It is in the unit immediately to the west of No. 1 Moon.

Shell Petroleum Corp.'s No. 1 Turner, SW cor. NE Section 34-18-38, a north offset to Capitan Oil Co.'s No. 1 Turner and an outside well, is a near completion at 4,226 feet, total depth. It is testing and made 236 bbls. of oil in one hour through 3-inch tubing with approximately 7,500,000 feet of gas. This was after treating with 6,000 gallons of acid.

Continental Oil Co.'s No. 3 Grimes, SW NW SE Section 28-18-38, had an oil show at 3,216-20 feet and is drilling in lime at 3,916 feet. Gypsy Oil Co.'s No. 4 Graham-State, C NW NE Section 24-18-37, began spudding April 4, and is waiting after cementing 12½-inch at 285 feet with 235 sacks. Capitan Oil Co.'s No. 2 Turner, CWL SW SE Section 34-18-38, is drilling at 2,885 feet in anhydrite.

National Securities Oil Co.'s No. 1 Linam, NE SE SW Section 33-18-37, 3½ miles west of the nearest producer, will plug back from 4,506 feet to upper shows and acidize. It had the first gas at 2,995 feet and an oil show at 3,040 feet. It had other shows at 3,315, 3,620 and 3,860 feet. It gauged 4,000,000 feet of gas at last named depth. It had several other gas and oil shows with sulphur water at lower depths.

Cooper Area

Two completions were reported in the Cooper Pool. Texas Co.'s No. 6 Ogg, C SW SE Section 35-24-36, was completed at 3,390 feet and flowed 417 bbls. in five and one-half hours through 2-inch at 3,387 feet with 2,000,000 feet of gas. The pay was at 3,350-90 feet and 7-inch is at 3,350 feet. Elevation is 3,267 feet. This well calls for offsets which are noted in Jal Pool operations.

The second completion was Phillips Petroleum Co.'s No. 15 Woolworth, C SE NE Section 27-24-36, which made 32½ bbls. an hour through 2½-inch at 3,468 feet with 1,250,000 feet of gas. The pay was at 3,400-68 feet and elevation is 3,323 feet.

Humble Oil & Refining Co.'s No. 1 Thomas, C SW SE Section 23-24-36, which was drilled in doubtful territory and completed for 7,500,000 feet of gas last November after plugging back from 3,602 feet to 3,450 feet to shut of water, is now making some oil. At last report it was showing for 1 bbl. an hour the 9⅝-inch is at 2,763 feet and there is no 7-inch in the hole, this string being pulled when it plugged back.

Humble's No. 1 Coats, C NW NE Section 10-24-36, has recovered lost drill stem and is fishing for parted casing and still trying to kill the well. No. 2 Coats, the relief well, is now pumping 200 bbls. of water per hour into No. 1 Coats.

Texas Co.'s No. 1-B Ogg, C SE SE Section 34-24-36, is drilling at 3,410 feet in lime, and its No. 2-B Ogg, C SE NE Section 34-24-36, is drilling at 2,375 feet in salt. Its No. 3-B Ogg, C NE NE Section 34-24-36, is building rig. General Crude Oil Co.'s No. 1 Woolworth, C NW SE Section 26-24-36, is waiting after cementing 9⅝-inch on bottom at 1,346 feet with 500 sacks. The Amerada Petroleum Corp.'s No. 1 Isabel, C SE NE Section 15-24-36, had gas shows at 3,121-74 and 3,183 feet and is drilling at 3,187 feet in lime. Simms Oil Co.'s No. 1 Woolworth, C SE NE Section 35-24-36, total depth 3,406 feet, again plugged back in an effort to drill by drill pipe. This time it plugged back to 1,440 feet. Continental Oil Co.'s No. 26-A-1 Gates, C SW SW Section 26-24-36, is rigging up rotary, and its No. 23-A-2 Gates, C NW NW Section 23-24-36, has rig up.

Amon G. Carter and others' No. 1 Mattix, C SE NW Section 3-24-37, 6 miles northeast of the Cooper Pool, set 12½-inch at 460 feet and is drilling at 840 feet in red beds.

Jal Area

One completion and three new locations were reported in the Jal Pool. The completion was Southern Petroleum Exploration Co.'s No. 1-B Ascarate, C NE SW Section 24-25-36, which flowed 30 bbls. an hour through the 2½-inch at 3,306 feet from the pay at 3,294-3,306 feet. It showed 1¼ per cent basic sediment and water and 1,000,000 feet of gas. Elevation is 3,100 feet.

One of the new locations is Gypsy Oil Co.'s No. 2 Arnott, C NW NE Section 2-25-36. While it is listed as being in the Jal Pool, it is a south offset to Texas Co.'s No. 6 Ogg, reported a completion in the Cooper Pool this week. The other two locations are several miles southeast of the main development where there has been very little drilling until Empire Gas & Fuel Co. completed a producer recently. Empire's No. 2 Dyer, NW cor. SE Section 31-25-37, has cellar and pits completed. It is one-fourth of a mile north of No. 1 Dyer. Gypsy Oil Co.'s No. 1-B Arnott, NW SW SW Section 32-25-36, was spotted east of No. 1 Dyer.

A near completion is Texas Co.'s No. 1 Parker, C SW SW Section 29-26-37, the most southerly well in the Jal Pool and 1 mile north of the Texas line. It had sulphur water and oil at 3,242-48 feet and flowed 30 bbls. of fluid an hour with 200,000 feet of gas after acidizing. It is testing.

Gypsy Oil Co.'s No. 1 Arnott, C NE NW Section 2-25-36, has cellar and pits completed. Hammond, Inc.'s No. 1-B Sholes, SE cor. NW Section 12-25-36, is running pipe at 3,254 feet and its No. 2-B Sholes, NE cor. NW Section 13-25-36, had a gas show at 2,848-58 feet and is drilling in lime at 2,959 feet. R. H. Henderson and others' No. 1 Langley, C SE SE Section 8-25-37, is fishing for two strings of cable tools with rotary at 2,875 feet. Byrd-Frost, Inc.'s No. 1-A Wells, SE cor. NW Section 12-25-36, spudded to 40 feet and shut down to rig up rotary.

Monument Area

The Monument Pool, 7 miles north of the Eunice Field, in which Amerada Petroleum Corp. recently brought in the discovery well for 3,600 bbls. initial production, will soon be moving its quota of crude to market. Texas Pipe Line Co. is laying a 6-inch line from a connection with its line to the Lea Pool to the discovery well. Development is expected to be speeded up with the completion of an outlet.

Amerada Petroleum Corp.'s No. 1-F State, C SW SW Section 36-19-36, an offset on the north to the discovery, cemented 9⅝-inch on bottom at 2,318 feet with 450 sacks and is waiting. Shell Petroleum Corp.'s No. 1-E State, C SE SE Section 35-19-36, is still a location.

Eunice Area

Two completions and one new location were reported in the Eunice Pool. Continental Oil Co.'s No. 20-C-3 State, C SE NW Section 20-21-36, an inside well, was completed at 3,891 feet for 105 bbls. an hour, with 1,000,000 feet of gas, from the pay at 3,868-91 feet. The 5½-inch is at 3,810 feet and the 2½-inch tubing at 3,886 feet. Elevation is 3,626 feet. Reamed down it flowed 500 bbls. through a three-fourths-inch choke on the tubing.

The other completion was Continental Oil Co.'s No. 9-B-2 Meyers, C SE NW Section 9-21-36, on the northeastern side of the development. It proves up one unit south and east of production. It made 50 bbls. an hour through 2½-inch tubing at 3,823 feet from the pay at 3,754-3,825 feet. Elevation is 3,564 feet.

The first report is Repollo Oil Co.'s No. 2 Adkins, SW cor. NE Section 9-21-

Good Show in South Turner Valley Test; Annual Report of Royalite Oil Co.

By VICTOR LAURISTON
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Apr. 27.—In Section 28-18-2w5, South Turner Valley, Renfrew Royalties' No. 1, Morris & Goodfellow, LSD 3, struck a good show of light crude oil between 4,500 and 4,600 feet and is deepening below 4,700 feet. Potential is estimated around 35 bbls. Publix Oil & Gas Co.'s No. 1, LSD 8, has deepened to 5,524 feet, about 626 feet in the lime. It has about 350 feet of fairly porous horizon in the lime with naphtha recovery around 40 to 50 bbls. It will be shot with 1,000 quarts. British Dominion Oil & Development Corp.'s No. 4, LSD 6, same section, is running casing to 5,350 feet.

In Section 21-18-2w5, Highwood-Sarcee Oils' No. 1, LSD 16, brought in last June with a good naphtha recovery from the lime, has taken out sufficient production to repay the cost of drilling. Production, which started between 500 and 550 bbls., is holding up at between 210 and 220 bbls. Union Freehold Oil Corp.'s No. 1, LSD 8, same section, is in the top of the lime at 5,610 feet with a fishing job.

Royalite Operations

The annual report of Royalite Oil Co., subsidiary of Imperial Oil, Ltd., shows sales totaled 507,138 bbls. of crude, crude naphtha and natural gasoline and 6,535,685,000 feet of gas. Gross revenue was $1,759,415.34 and gross receipts from pipe line revenues, interest, royalties and other sources amounted to $563,473.94.

During the year Royalite acquired Turner Valley properties, chiefly lime rights, of the Calmont, New McDougall Segur, McDougall-Segur Exploration, Sterling Pacific, Commonwealth, British Dominion, Freehold, Wellington, Okalta, McLeod and Home companies, together with royalty rights and interests purchased from various companies and individuals. In almost all cases payment was made in Royalite stock. The company increased its holdings of leasehold and fee simple lands, exclusive of surface property, by 1,535 acres, bringing its holdings to 7,100 acres. It had 55 producing wells. The purchases in central and northern Turner Valley, where the company has held the larger part of the acreage, has resulted in an almost complete unit holding. It also permits the company to conserve a supply of natural gas for future delivery under its contract with the Canadian Western Natural Gas Co. Storage of surplus gas in the Bow Island Field has continued, the net volume stored amounting to 6,546,664,000 feet, or approximately a year's supply.

(Continued on Page 126)

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36, which is moving in materials. It is a north offset to its No. 1 Adkins.

Continental Oil Co.'s No. 9-B-2 Meyers, C SE NW Section 9-21-36, is building rig, and its No. 8-B-2 Meyers, C NE NW Section 8-21-36, had a gas show at 3,653 feet and is drilling at 3,750 feet in lime. Same company's No. 20-C-5 State, C SW SW Section 20-21-36, is moving in materials. Continental's No. 18-A-2 Meyers, C NW SE Section 18-21-36, had 11,000,000 feet of gas at 3,828 feet and is preparnig to drill deeper from 3,877 feet. Its No. 20-C-4 State, C SE SW Section 20-21-36, plugged back from 2,952 feet to straighten and is drilling in new hole at 2,580 feet.

Humble Oil & Refining Co.'s No. 3-B State, C NW NE Section 29-21-36, plugged back from 2,985 feet to 2,140 feet to straighten crooked hole. The Shell Petroleum Corp.'s No. 1-A State, C SE NE Section 12-21-35, is still trying to clean out bridge after shooting at 3,860-3,910 feet. Skelly Oil Co.'s No. 2-B State, C SW NW Section 16-21-36, had gas at 3,659-79 feet and is waiting after cementing the 7-inch at 3,775 feet with 500 sacks. Tide Water Oil Co.'s No. 4 State-Foster, C NE NE Section 8-21-36, was drilled to 3,887 feet in sandy lime and made drill stem tests which showed gas at 3,735-70 feet and oil at 3,780-3,880 feet. The 7-inch was then run to 3,765 feet and cemented with 410 sacks. The Amerada Petroleum Corp.'s No. 1 Houston, C SE NE Section 7-21-36, is rigging up rotary. Atlantic Oil Producing Co.'s No. 1-E State, C NE SW Section 5-21-36, began spudding April 10, set the 12½-inch at 81 feet with 100 sacks and is drilling at 1,295 feet in anhydrite. It topped the anhydrite at 1,180 feet. Elevation is 3,578 feet.

Ohio Oil Co.'s No. 3 State-McDonald, C NE SW Section 16-22-36, is rigging up rotary, and Rowan Drilling Co.'s No. 1 Elliott, C NE SW Section 17-22-37, began spudding April 6, set 10¾-inch at 250 feet with 160 sacks and is drilling at 1,700 feet in red beds and anhydrite.

Lea Area

Texas Co.'s No. 1 Cole, C NE NE Section 35-19-33, is drilling at 3,341 feet in lime, and Anderson & Pritchard's No. 1 Fisher, C SE NE Section 8-20-35, is drilling at 1,060 feet in red beds. Jeffers Oil Co.'s No. 1 Etz, C NE SW Section 12-21-32, is drilling water well.

Maljamar Area

Maljamar Oil & Gas Co.'s No. 1 Miller, C NW SW Section 23-17-32, had a show for 4,000,000 feet of gas a day at 3,210-14 feet and is drilling at 3,270 feet in lime.

Nadine Area

Repollo Oil Co.'s No. 1 Arnold, SW NW SE Section 11-20-38, a wildcat 6 miles south of the Hobbs Pool, had gas shows at 3,550 and 3,785 feet and is drilling at 4,035 feet in lime and anhydrite.

Eddy County

A good completion in the Maljamar Pool in Eddy County is imminent in Grayburg Oil Co.'s No. 6 Burch, C SE NE Section 19-17-30, which flowed 341 bbls. in 24 hours with a string of lost tools in the hole. Total depth is 3,189 feet. Gas encountered at that depth blew the tools up the hole where they lodged. Fishing is in progress. The well is an east offset of the company's No. 5 Burch, completed last fall for 510 bbls. initial.

One new operation was reported in the Globe area south of the Artesia Pool in Flynn, Welch & Yates' No. 1 Yates, C SE NW Section 6-20-27, which is rigging up.

Premier Petroleum Corp.'s No. 1-E Dexter, C NW NE Section 20-17-30, Maljamar area, is drilling at 1,940 feet in anhydrite.

In the Artesia district, Tignor, Etz & Keyes' No. 1 State, C NE NW Section 15-17-28, is drilling at 1,665 feet in lime, and Fred Brainard's No. 1 Brainard, NW NE Section 2-17-28, is shut down at 1,396 feet for engine repairs.

Barnsdall Oil Corp.'s No. 2 Dodd, C NE SE Section 22-17-29, Jackson area, set the 8¼-inch at 1,008 feet and is drilling at 1,325 feet in anhydrite.

In the Getty area Getty Oil Co.'s No. 7 Dooley, SW cor. NW Section 24-20-29, is drilling at 3,660 feet in lime. George Etz and others' No. 1 State, C NE NW Section 36-20-28, is fishing for bit at 463 feet, and Dooley and others' No. 1 Commerce Trust, NW NE SW Section 8-20-27, is drilling at 140 feet in gray and red shale.

Otero County

Flynn, Welch & Yates' No. 1 Donahue, C NW NE Section 28-24-15, is drilling at 125 feet.

Guadalupe County

Anton Chico Development Co., Ltd.'s No. 2 fee, NW NE SW Section 20-9n-17, Anton Chico grant, is cementing off cavity at 600 feet in red beds.

Torrance County

A new operation in Torrance County, 12 miles northeast of the DeWitt carbon dioxide gas wells, is 48 Petroleum Co.'s No. 1 Greenfield, C NW SW Section 17-9n-8e, Buffalo Draw district.

San Juan County

Continental Oil Co.'s No. 43, NW SE NW Section 12-29-19, Rattlesnake Field, is bottomed at 930 feet and straightreaming to lower 5-inch to top of sand.

COLORADO

Adams County

Riddle Petroleum Co.'s No. 1 Baxter, C SW Section 2-3s-66, Derby district, is waiting for completion of water well bottomed at 910 feet and underreaming 6¼-inch. It is in shale below the water sand at 840-872 feet and showing a little gas.

Boulder County

Leslie R. Steele and others' No. 1 Maxwell, SW NE NW Section 24-1n-71, Boulder district, is drilling at 430 feet.

Moffat County

Stanolind Oil & Gas Co.'s No. 28-X Parkinson, NE SW SW Section 22-4n-92, Iles Dome, cored the Sundance to 3,391 feet and is waiting after cementing 8⅝-inch at 3,387 feet. Top of the Sundance was at 3,385 feet. Cores showed good saturation. Same company's No. 4-SD Shaw, NE NW NE Section 27-4n-92, old well drilling deeper from 3,426 feet, pulled tubing and cemented 5½-inch at 3,425 feet. Its No. 16-SD Shaw, SE NW NW Section 27-4n-92, is still a location.

Montezuma County

McElmo Oil Co.'s No. 1 West, NE NW NE Section 31-36n-17w, McElmo Canon district, is still shut down at 3,131 feet in the Pennsylvanian waiting for pipe. Scouts returning from the well say the oil is standing 1,200 feet in the hole. There is 1,400 feet of open hole and it is caving. This test is about 35 miles north of the Rattlesnake Pool in San Juan County, New Mexico, where Continental Oil Co. drilled two tests to the Pennsylvanian. The last one was completed for 600 bbls. a day at 6,600 feet. Elevation is 5,310 feet. Elevation of the McElmo well is 5,450 feet.

Park County

South Park Oil Co.'s No. 1 State, SE cor. SW Section 16-11-75, Hartsel district, is bottomed at 1,415 feet and underreaming 10-inch to lower to around 1,000 feet where there was a little water showing in the shale.

Pueblo County

Hooker-Hill Syndicate's No. 1 Hartman, N Wcor. Section 31-22-61, Fowler district, which spudded last July, has been shut down at 400 feet since last August.

Prowers County

Trojan Oil & Gas Co.'s No. 1 Lotus Oil, NW NE NE Section 15-23-46, Lamar district, is fishing for tools at 5,224 feet.

Carter Oil Co. is reported taking some leases to the south and west of Lamar. Representatives of the Tide Water Oil Co. and Amerada Petroleum Corp. have

been reported in the Lamar district watching developments. The Continental, Gypsy, Texas and other companies have considerable acreage blocked to the north of the Lamar test.

WYOMING

Albany County

California Co.'s No. 1 Holst, NE SE SE Section 13-17-77, discovery well on the Quealy Dome, which began deepening from the Muddy sand two weeks ago, has encountered more production in the Dakota. It was temporarily completed last fall in the Muddy at 3,146-75 feet for 60 bbls. a day initial. After filling the tankage on the lease it shut down until spring. It resumed two weeks ago, topped the Dakota at 3,231 feet and was drilled to 3,236 feet. The 7-inch was then set at 3,219 feet for a formation shutoff. When plug was drilled it began filling at the rate of 100 feet an hour and began to flow, making 122 bbls. in 24 hours. There was not much gas with the oil. It then was given a swabbing test and swabbed at the rate of 20 bbls. an hour without lowering oil below 2,000 feet. It is estimated it will make around 400 bbls. a day on the pump. The production in the Muddy will be saved through a bradenhead on the 7 and 9⅝-inch. This well was listed as one of last year's discoveries in Wyoming.

Big Horn County

A discovery in a fault block south of the Byron Dome in the Big Horn Basin is reported in Peay Oil Co.'s No. 1 Denio, Tract 43-C, Section 15-55-97. The test was started in the fall of 1929 by Wisconsin Holding Co. Afterwards it was taken over at 600 feet by Crosby and Huntington and a few weeks ago these interests organized Peay Oil Co. to complete the test. It had a show of light oil at 3,147-82 feet in a stray sand above the Torchlight. It was delayed by a fishing job which was cleared up the past week, after which drilling was resumed at 3,200 feet. It topped the Torchlight sand, the equivalent of the First Wall Creek in Salt Creek, at 3,225 feet and drilled into the sand only 6 inches. It began flowing by heads and filled a 250-bbl. water tank in 16 hours. The oil is very high grade and will test probably between 48 and 50 gravity and has a paraffin base.

The Byron and Garland structures, alongside each other, both produce oil in lower formations and gas in upper horizons. The Frontier is a gas horizon on the Garland Dome, but is eroded at the top of the Byron structure. Both domes show considerable faulting. There are some shallow wells at the southeastern end of the Byron structure which have been producing small quantities of oil at around 900 feet for a number of years. These wells are north of No. 1 Denio. In 1924 California Co. drilled four wells in Section 31-56-97, in a fault block on the flank. The first of these wells came in spraying oil with the gas and caused considerable excitement. However, the production declined. The best of the four wells made around 50 bbls. a day at first but the operation was not considered commercial and was abandoned. None of these wells went to the Sundance. No. 1 Denio is the first well drilled in the fault block in which it is operating and is some distance from the top of the structure. Fred C. Huntington, of Billings, is president and organizer of Peay Oil Co. Jesse Crosby and A. M. Mortensen, of Cowley, are associated with him. There are a number of sands down to and including the Madison lime which are productive on one or the other of the two domes, all of which lie below the Torchlight in which the discovery was made.

California Exploration Co.'s No. 1 Government, C SW SW Section 4-54-94, Spence district, is drilling at 1,250 feet with a hole full of water. It is about at the depth at which the Madison lime was expected.

Yale Oil Corp.'s No. 1 Blakesley, NE NW Section 28-49-91, Bonanza district, which showed considerable oil in the Kimball sand topped at 1,412 feet, is underreaming 8¼-inch to lower from 1,395 feet to the top of the sand in an effort to shut off some water showing with oil.

Ohio Oil Co.'s No. 2 Sidon Canal, C SW SW Section 24-56-97, Byron Dome, is drilling at 475 feet, and its No. 1 Till, C SE SW Section 24-56-97, is rigging up rotary. Taylor Oil Co.'s No. 1 Hoskins, SE SE Section 255-6-97, is preparing to set whipstock to drill by 10 stands of drill pipe still in the hole. Total depth is 5,275 feet. Peter Evanoff and others' No. 1 McAllister, Lot 40, Section 2-55-97, South Garland, is rigging up cable tools.

Carbon County

Ohio Oil Co.'s No. 1 Kyle, NE SE NE Section 26-21-79, Medicine Bow district, joint with California Co., drilled out plug after cementing 7-inch at 5,159 feet and cleaned out to bottom at 5,206 feet without encountering any oil. It will produce the wet gas through the tubing. A drill stem test at 5,151-5,206 feet before casing was run showed for 36,000,000 feet of gas a day in the top of the Sundance.

Earl W. Reeder, Inc.'s No. 1 Whitford, SW SE SE Section 24-20-84, Overland Dome, recemented the 10-inch at 3,595 feet after swedging out collapsed pipe and drilled the G-P sand at 3,600-30 feet. It was dry and tight. It is drilling ahead at 3,785 feet.

Ohio Oil Co.'s No. 10 Harrison & Cooper, NE NW SW Section 35-20-78, Rock Creek, is drilling at 2,839 feet.

Converse County

Chadron-Osage Oil Co.'s No. 1 State, SW cor. Section 16-32-69, Shawnee district, is drilling below 200 feet.

Fremont County

Mid-American Oil Co.'s No. 2 Government, C NE SW Section 14-28-92, Sheep Creek structure, discovery well, pumped 110 bbls. the first 24 hours from the Embar at 2,175-2,263 feet. It was then treated with 1,000 gallons of acid and is waiting.

Niobrara County

Two new locations on the Lance Creek structure, both to go to the Sundance, were reported. Argo Oil Co.'s No. 3 Elliott, C NE NE Section 6-35-65, and the Continental Oil Co.'s No. 2 Schuricht, C SE NE Section 6-35-65. The first named is building rig, Manning & Terry having the contract, and the second is moving in materials.

Continental Oil Co.'s No. 1 Apex-3, SW NE SW Section 34-36-65, an old well drilling deeper, is still delayed at 3,538 feet. The cement bailer stuck 18 feet off bottom and bridged the hole. Ohio Oil Co.'s No. 6 Lamb, C SE SE Section 32-36-65, is drilling at 2,033 feet in shale.

S. & H. Development Co.'s No. 1-A Olinger, SE NE NW Section 1-36-63, Old Woman Creek, topped the Muddy at 1,359 feet and has 1,200 feet of water in the hole. Contract has been made to deepen it an additional 30 feet from present total depth of 1,370 feet.

Park County

Texas Co.'s No. 3 Sonners, NE NW Section 29-51-100, Oregon Basin Field, is bottomed at 2,288 feet and fishing for drill collar and bit.

Weston County

Osage Trust Co.'s No. 26 State, C SE NE Section 14-46-64, Osage Field, was completed for 25 bbls. daily on the pump from sand at 1,603-10 feet, after a shot. Same company is rigging up its No. 15-A, SE cor. NW NW SE Section 14-46-64. Federal Oil Co.'s No. 6, CEL SE SE Section 15-46-64, standing rigged for more than a year, is skidding rig to the C SE SE of the same section.

MONTANA

Glacier County

Four new operations were reported in the Cut Bank Field as follows:

Nadeau Brothers' No. 2 Coover, C NE NE Section 17-33-5w, location; R. C. Tarrant's No. 1 O'Brien, C SE SW Section 29-34-5w, location; Kately-Drumheller's No. 1 Ward, Lot 2, Section 10-34-6w, rig on location; Consolidated Gas Co.'s No. 5 Tribal, Lot 5, Section 3-34-

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6w, rig on location. There were no completions.

Askins' No. 1 Askins, Lot 24, Block 23, Section 12-33-6w, dropped 1,700 feet of 8-inch pipe which collapsed. Total depth is 2,700 feet. Consolidated Gas Co.'s No. 6 Tribal, C SW SW Section 10-34-6w, is spudding at 70 feet. Dakota-Montana Oil Co.'s No. 2 Winkler, NE NW Section 26-35-6w, is shut down at 570 feet. Gardner-Smith's No. 1 Tweedy, NE NE Section 36-33-6w, cemented 10-inch at 570 feet. L. R. Hannah, trustee's No. 1 State, Lot 5, Block 4, Section 12-33-6w, is standing rigged. Indian Oil Co.'s No. 2 Winkler, SW SW Section 23-35-6w, cemented whipstock at 1,210 feet to drill by lost pipe. Total depth 2,585 feet.

Montana Headlight Oil Co.'s No. 5 Yunck, NW NE NW Section 1-34-6w, is drilling at 1,905 feet. Montana Power Gas Co.'s No. 1 Highland Unit, NW SE NW Section 27-36-5w, is spudding at 100 feet, and its No. 1 Lookoff, C SW SE Section 28-33-5w, is rigging up. Same company's No. 1 Miller, C NW NW Section 28-33-5w, is spudding at 110 feet. Par Oil Co.'s No. 4 Haines, SE SE Section 2-34-6w, is drilling at 1,880 feet. Bruce Radigan's No. 1 Connolly, NW SW NW Section 7-33-5w, is fishing for tools at 2,570 feet. Santa Rita Oil & Gas Co.'s No. 1 Ritchie, C NW SW Section 5-33-5w, topped the Colorado at 430 feet and set 12½-inch at 490 feet with 50 sacks, and its No. 2 Ritchie, C NE NE Section 6-33-5w, has rig on location. The same company's No. 5 Whetstone, NE SE Section 22-35-6w, is fishing for bit at 130 feet. Steele Creek Producers, Inc.'s No. 2 Carman, C SW NW Section 19-34-5w, is rigging up.

Texas Co.'s No. 6 Hinkle, NE cor. Section 2-34-6w, is installing pumping equipment. It was drilled to 2,812 feet and oil rose 1,800 feet from the pay at 2,768-2,801 feet. Same company's No. 3 Schlag, SW SW Section 26-35-6w, cemented the 10-inch at 301 feet, and its No. 1 Sherburne Mercantile Co., C NW SW Section 10-34-6w, is drilling at 303 feet.

Toole County

One completion and two locations were reported in the Kevin-Sunburst Field. Ward & Cruise's No. 1 Thompson, NW SE Section 28-35-3w, is pumping 25 bbls. daily, 50 per cent water, from pay at 1,723-30 feet.

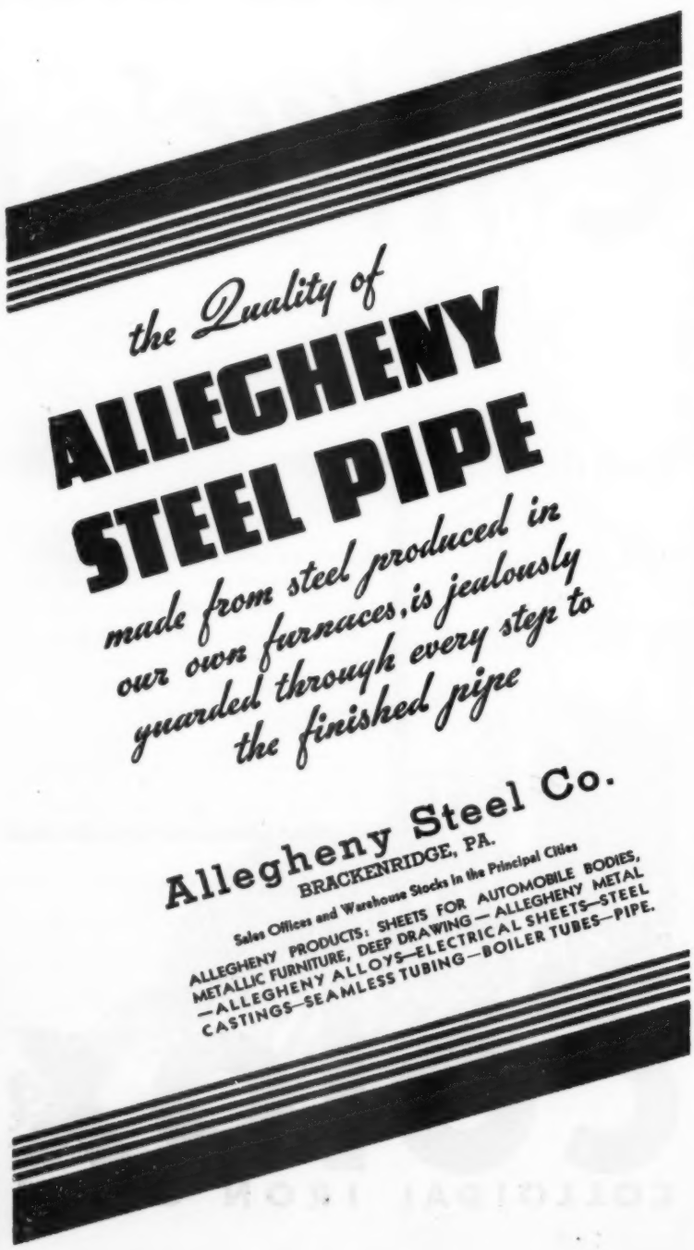
New Era Fuel Co.'s No. 7 Lorensen, CNL NW NE Section 27-35-2w, is moving in rig, and P. L. Eddy's No. 5 Seabrook, NE SW SW Section 19-35-2w, is a location. Monopeg Oils, Ltd.'s No. 3 Dipple, SW NW Section 28-35-1w, is fishing for tools at 1,353 feet, and A. E. Crumley's No. 5 Shaw, NW SE SW Section 35-36-2w, is drilling at 150 feet. Texas Co.'s No. 5 Swears, C SW Section 9-35-2w, is drilling at 960 feet.

Big Horn County

J. W. Goering's No. 2 fee, Lot 5, Block 12, Section 23-1s-32, town of Hardin, was completed as a gas well in sand at 669-689 feet for 80,000 feet a day with a pressure of 130 pounds. Only 40 feet of 8¼-inch is in the hole.

Carbon County

Ohio Oil Co.'s No. 15 Montana Industrial, C NE NE Section 11-7s-21, Dry Creek, has rig up and contractor is moving in rotary equipment.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Gulf Coast Fields

(Continued from Page 98)

taken from 9,533-35 feet were not recovered, but the operators were still in sandy shale, which showed oil, mentioned above. This is one of the best showings encountered in a deep wildcat test in this area for some time, and the outcome will be most interesting. It is located in Section 19-17s-24e.

Vermillion Parish

On the northwest edge of the Gueydan Field, Vermillion Parish, Pure Oil Co. made a drill stem test on its No. 6 Alliance Trust Co., a deep test and recovered nine fourbles of drilling mud and salt water, with a slight showing of oil through a one-quarter inch choke on top and a three-eighths inch choke on bottom, with no pressure. The test was made in broken sand and shale showing oil from 8,540-80 feet, the total depth. Eight and five-eighths inch casing was cemented last week at 8,540 feet.

New Deep Test in Acadia

Acadia Parish, which has been the scene of much wildcat activity in Coastal Louisiana for several months, received another interesting deep test, when Continental Oil Co. announced location for its No. 1 Theogene Artego in Section 28-7s-2w, about 10 miles north of the Jennings Field and approximately 6 miles south of Basile. The test is located on a block of approximately 7,500 acres, and it will be the first test to be drilled in Coastal Louisiana by the company, although it has acquired several prospects since entering the district.

New Producers in Gillis Pool

Two more producers were added to the Gillis Field, Calcasieu Parish, bringing the total number of oil wells to be completed in the field to eight. Both producers were completed by the Union Sulphur Co. Its No. 3 Barbe, Section 11-9s-8w, was completed at 6,756 feet for an initial production of 610 bbls. per day through a one-quarter inch choke, with tubing pressure 1,100 pounds and no gauge on the casing. Six and five-eighths inch casing was cemented at 6,748 feet. No. 1 Reeves-Mayo, located northeast of the above well, was completed the latter part of the week from a screen setting of 6,740-50 feet, and although it had not thoroughly cleaned itself an early gauge indicated a daily output of 195 bbls. of oil, with the tubing pressure registering 2,250 pounds. Six and five-eighths inch casing was cemented at 6,741 feet. Due north, the operators were drilling plug on its No. 2 Reeves-Mayo and it should be completed the first part of the week. Bottomed at 6,727 feet, 6⅝-inch casing was cemented at 6,717 feet. Attempt at conversion of Fohs Oil Co.'s No. 2 O. H. Castle, from a gas well to an oil producer failed, when the packer set at 7,025 feet failed to hold and the well started making dry gas estimated at 3,000,000 feet, through a one-quarter inch choke on 2½-inch tubing, with tubing pressure 2,700 pounds and casing pressure 2,700 pounds closed in. It is being killed and will be carried deeper.

New Producing Horizon

On the east flank of the East Hackberry Field, Calcasieu Parish, Gulf Production Co.'s No. 17 Erwin, opened up another new producing horizon for the field, when it was completed at 7,345 feet for an initial production of 639 bbls. per day through a three-eighths inch choke, with tubing pressure 475 pounds and casing pressure 950 pounds.

Roanoke Field

In the Roanoke Field, Jefferson Davis Parish, Shell Petroleum Corp. has cemented 8⅝-inch casing at 7,584 feet in its No. 3 Kratzer, preparatory to testing at a total depth og 7,597 feet. This will open up another producing horizon for the field, if the test makes a producer. Production is found at 7,800, 7,900 and 8,600 feet. Humble Oil & Refining Co. made location for its No. 2 Taylor, located 1,320 feet east and 440 feet south of the NW cor. SW Section 12-9s-4w, approximately 880 feet south of Shell Petroleum Corp.'s No. 3 Kratzer.

Good Well in Terrebonne Parish

One of the best producers to be completed in the Calliou Island Field, Terrebonne Parish, for some time, was made at Texas Co.'s No. 17 Calliou Island, which was completed at 4,033 feet for an initial production of 1,144 bbls. through a three-eighths inch choke, with tubing pressure 563 pounds. Location is in section 20-23-23.

Shell Petroleum Corp.'s No. 1 W. M. McCory, a wildcat test in Jackson County, is coring in shaley sand below 5,772 feet. A drill stem test was made the first part of the week from 5,648-68 feet and the operators recovered 1 quart of distillate with pressure building up to 525 pounds through a 3½-inch choke. It is located in the A. Kountze Survey.

California Fields

(Continued from Page 103)

Kern River front have taken a new lease on life and it is likely that several new wells will be drilled during the next few months. The Kern River Oilfields, Ltd., recently spudded in a second well on this acreage and the bit is going ahead a little below 1,500 feet with the completion depth in sight. The success of this company has prompted other operators to engage in drilling operations on adjoining acreage. Early this week the George F. Getty Co. completed No. 3 Grady in Section 26-28-27, brought in pumping 311 bbls. of 16.8 gravity oil per day from 2,091 feet. The Chanslor Canfield Midway Oil Co. has one well in the oil sand and is rigging up another project in Section 23-28-27 and the Associated Oil Co. is making preparations to spud in a new well in Section 23-28-27.

The Shell Oil Co. added another new well to its list of producers in the Mount Poso Field of Kern County this week by finishing No. 2 Glide after cleaning out the hole to bottom, 1,719 feet. This well was originally completed several years ago but has been off production due to sand trouble. Upon being returned to production it started off pumping 913 bbls. of relatively clean 16.5 gravity oil per day. In the Midway-Sunset Field of Kern County, the Standard Oil Co. completed No. 23 in Section 15-32-24, brought in pumping 290 bbls. of clean 26.7 gravity oil per day from 2,972 feet after the hole had been finished with an 8⅝-inch liner carrying 107 feet of perforated. Honolulu Oil Corp. finished a new well in the Round Mountain Field of Kern County, and was put on production pumping 470 bbls. of 15.7 gravity oil per day from 2,181 feet following the landing of a 6⅝-inch liner including 31 feet of perforated. Up in the Ventura Avenue Field, the Shell put No. 85 Taylor, a new well, on a production test but it was good for only 340 bbls. of 30.5 gravity oil cutting 24 per cent and 714,000 feet of gas per day from 5,575 feet. This hole was completed with a 5¾-inch liner carrying 242 feet of perforated.

GEOLOGIST DIES

CHESTER, Nova Scotia, Apr. 27.—Harry Cyril Boydell, widely known as a geologist in the United States and Canada, died here recently, aged 56.

TECHNICAL QUESTIONS ANSWERED

By Charles K. Francis, Ph. D., Technical Editor

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible.

Inquiries must be signed but only the given initials will be printed. The source of the question is considered to be confidential.

Questions requiring a discussion of patents, the use of intricate formulas, extended computations, or cost estimates cannot be considered.

When the matter is of general interest the reply will be published within a reasonable time.

Materials for Masking Odor of Kerosene and Other Products

We wish to secure a deodorant which will effectively neutralize the odor of kerosene. Can you inform us whether such a product can be secured?—G.A.S.

The odor of a petroleum product originates in the crude oil and in the refinery. The compounds that impart an objectionable odor to the lighter fractions such as gasoline, naphtha and kerosene, are hydrogen sulphide, mercaptans, nitrogen compounds and complex substances possibly including some aldehydes and phenols. The cheapest way to remove such odors is by adequate treatment in the refining process. The odor of a fully refined petroleum liquid is a pleasing one, being very mild, suggesting cedar.

The market price of the ordinary petroleum liquids is so low that it is not economically feasible to use very much of anything to mask an objectionable odor. However, the recent development in the preparation of insect sprays, consisting for the larger part of kerosene or naphtha, selling at a price much above that received for the primary products, has included odorizing with the essential oils and aromatic compounds.

It appears that the substance most used for imparting a pleasing odor to soaps, greases, pastes, etc., is nitrobenzene. This substance, having the odor of bitter almonds, is very powerful, a few hundredths of a per cent usually being sufficient, and is quite cheap, selling for approximately 12 cents a pound. There are also available the essential oils, bergamot, cedar, citronella, pine, sandalwood, the terpenes and organic esters.

Commercial Manufacture of Motor Fuel From Coal

Please advise as to whether there are any companies in the world who are actually making gasoline from coal. There has been so much in the press about this matter that I would very much appreciate your views as to whether there is any reasonable commercial process, how many plants there are and the capacity.—H. G. F.

Announcement has been made that on February 7 the first hydrogenation unit of Imperial Chemical Industries, Billingham, England, was put into operation. Motor fuel is said to be produced in this unit from creosote, which is a derivative of wood and coal. The major unit of the plant, for the conversion of bituminous coal, is not expected to be in service until some time during the coming summer. The original work was started on the Billingham plant in 1917.

The total annual capacity of this plant is to be approximately 1,000,000 bbls. of motor fuel; one-third of which is to be made from creosote and the rest from coal.

The Billingham plant is said to have cost about $15,000,000, which is much less than the cost for building the same plant in some other locality. There are so many favorable conditions existing at Billingham, including deposits of coal, anhydrite, salt and excellent facilities for shipping. The district produces several chemicals including ammonia, sulphuric acid; good products, such as methanol and creosote; and resins. The ammonia plant makes hydrogen as a by-product, which is compressed and transferred to the coal hydration plant.

While the general conditions are favorable at Billingham, including the high price in England of the imported gasoline, it remains to be demonstrated that the business of manufacturing a motor fuel from coal by hydrogenation is capable of yielding a profit. Should petroleum at any time become comparatively expensive, resulting in a high price for gasoline, then the hydrogenation of coal, and possibly shale, will become important.

Explosive or Flammable Limits of Vapor Mixed With Air

What proportion of the vapor of gasoline, also kerosene, will be required to form an explosive mixture with air? How does this quantity compare with the vapor from other liquids that are considered in this respect to be dangerous?—P.H.

The quantity of vapor from the petroleum liquids that will ignite, when mixed with air, is very low, but of about the same order as several well known volatile liquids. The explosive range of the hydrocarbon gas and the vapors from petroleum liquids is quite limited, any percentage in excess of the upper limit results in the mixture simply being combustible, burning quietly without an explosion.

The hazardous properties of common flammable liquids have been presented by A. H. Nuckolls in a bulletin of the Underwriters' Laboratories, from which the material here has been arranged.

The volatility of flammable liquids is of very great importance from a fire prevention standpoint, in as much as the combustion attributed to flammable liquids is in nearly all cases a chemical reaction between the vapor of the liquid and the oxygen of the air. It will be noted in this connection that the temperature at which a liquid passes freely into vapor is in most cases much below the temperature necessary to cause combustion.

For all liquids the volatility increases with rise of temperature. For any liquid there corresponds a temperature at atmospheric pressure below which the liquid will not pass into vapor in dangerous quantity, and consequently this temperature becomes a dividing line above which a flammable or explosive mixture may be formed with the surrounding air by the vapor from the liquid. It is of primary importance, therefore, in classifying the hazards of a liquid to determine this temperature.

In the case of most vapors and gases there is no basis for a sharp distinction between flammable limits and explosive limits as one is in general disposed to imagine. The propagation of flame in commonly known vapor of gas-air mixtures is relatively slow in the initial stages. Where the mixture is only partially confined a slow and "uniform speed" of propagation first occurs over a limited distance from the point of ignition. This initial phase of flame propagation which may be regarded as progressive combustion may be followed under certain conditions by a marked acceleration of speed together with an undulatory movement, which may result in vibrations. This is the phase of flame propagation commonly recognized as an explosion. There is a third phase in the propagation of flame termed the detonation wave, or simply, detonation which in the case of many vapors and gases may be set up, depending upon the conditions. Any of these phases of flame propagation under conditions of confinement will produce a pressure rise. The ultimate result will depend upon the nature of the vapor particularly its "combustion intensity" and the conditions, such as the proportions of vapor in air, the dimensions and strength of the container.

The flammable limits, as the proportion of vapor present in an air mixture are shown in the table.

FLAMMABLE LIMITS OF VAPORS IN AIR

	Limit by volume	
	Lower	Upper
Ammonia, NH_3	16.0	25.0
Benzene, C_6H_6	1.5	8.0
Carbondisulphide, CS_2	1.0	50.0
Carbon monoxide, CO	12.5	74.0
Ether, $(C_2H_5)_2O$	1.9	19.0
Gasoline, C_5H_{12} to C_8H_{20}	1.4	6.0
Hydrocyanic acid HCN	5.6	40.0
Illuminating gas	5/7	21/31
Kerosene, $C_{10}H_{22}$ to $C_{16}H_{34}$	1.1	7.0

When a flammable liquid is exposed to the surrounding air, the lower limit determines the minimum amount of vapor necessary to produce a unit volume of flammable mixture. Evidently then, the lower the low limit the more hazardous is the vapor or gas, other factors being assumed to be equal.

The upper limit and the flammable range also have a bearing on the fire hazard. It has been shown by experience that a relatively narrow flammable range, if in conjunction with a comparatively low, lower limit, may constitute a marked fire hazard, as in the case of gasoline, although in general the wider the flammable range the greater the hazard in this respect.

Fuel Consumed in Refineries and B.t.u. Required per Barrel Oil

I am making a study of the several fuels that are burned in refineries and it would help very much if you will give me the quantity of oil, gas, coal or any other fuel used in the refineries of the United States. What is the most reliable conversion unit applied to these fuels per barrel of oil refined?—N. R. M.

A recently published report of the U. S. Bureau of Mines, R.I. 3270, February, 1935, Survey of Fuel Consumption at Refineries in 1933, by G. R. Hopkins, supplies all the information required.

The fuel efficiency at refineries, or any comparison of fuels, is stated in terms of B.t.u. as determined from the actual material. The equivalents, such as 3 bbls. of oil equal to 1 ton of coal, are of no value for reasonably close figures, because of the variations in the heating values of oils and coals, but when the actual number of B.t.u. are known quite reliable deductions may be made as to the fuel value of any material. At this time the fuel materials of petroleum refineries include oil, acid sludge, coal, natural gas, still gas and petroleum coke.

Mr. Hopkins reports the fuel needed to refine a barrel of crude oil in 1933 was represented by 660,000 B.t.u., as compared with 692,000 B.t.u. required in 1932.

Since the beginning of the refining industry, the transition in fuels has been from solid to liquid to gaseous; in other words, the leadership was first held by coal, then passed to oil, and is now held by gas. In 1933, 54.7 per cent of the total heat units generated came from gas, 39.0 per cent from oil (including acid sludge) and 6.3 per cent from coal and coke. The principal change in the relative importance of the various refinery fuels in recent years has been the rapid growth in consumption of refinery or still gas at the expense of all the other common fuels. Still gas owes its ascendency to its cheapness and availability, and probably it would have become the primary refinery fuel years ago if recovery methods had been perfected. The relative importance of coal showed a small increase in 1933, the first gain recorded since these surveys were inaugurated in 1925. The increase in use of coal was undoubtedly due to increased operations at plants using it, as it is improbable that any new coal-burning apparatus was installed at refineries in 1933. The consumption of petroleum coke as refinery fuel again declined, as the demand for it for domestic and industrial purposes continued to absorb the production of the superior grades.

The fuel oil consumed in refineries, totaling 33,292,000 bbls. for the year 1933, included heavy and light fuel oils, tank residues, wax tailings, and slops. Acid sludge to the extent of 4,990,000 bbls. was used. Coal is the primary refinery fuel in the Appalachian district, the total for the United States, consumed in 1933, was 1,069,000 short tons. Natural gas was the leading fuel in the Rocky Mountain district; the total for the country for the year was 66,330,000,000 cubic feet. The consumption of still gas was 10,451,000,000 cubic feet and was the leading refinery fuel in all districts, except the East Coast, Appalachian, Texas inland and Rocky Mountain. Petroleum coke is of minor importance. Petroleum coke is the total for 1933 being 263,000 short tons.

PERSONAL PARAGRAPHS

E. J. (JACK) MATHEWS, formerly with the Central Kansas Pipe Line System, Wichita, Kans., has recently joined the E. H. Moore, Inc., organization in Tulsa in the production department.

* * *

R. M. SANDS, executive vice president of Petroleum Securities Company of Los Angeles, was elected a director of the Associated Oil Co. at the annual meeting of the company held in San Francisco recently.

* * *

C. L. CARTWRIGHT, formerly in the legal department of the Pure Oil Company, Fort Worth, Tex., is now connected with the tax and insurance department of the Stanolind Oil & Gas Company in the same city.

* * *

N. R. CRAWFORD, manager of Dowell, Incorporated, Midland, Mich., has recently been in the Kansas and Tulsa offices of his company attending to details of an expansion program now under way and returned to Midland, Mich., April 25.

* * *

R. G. (SCOTTY) GREENE, for several years a member of the Union Oil Company's geological staff, has been appointed chief geologist of the Bolsa Chica Oil Corporation. Mr. Greene is a graduate of Cornell and Stanford Universities.

* * *

W. E. RAMSEY recently returned from Oklahoma City and has opened offices in Los Angeles preparatory to resuming operations in California. The Ramsey Brothers have centered their operations in the Mid-Continent area for the past two years.

* * *

ROBERT H. PENCE, petroleum engineer who has to his credit the taming of one of the wildest blowouts in the Santa Fe Springs Field, has joined the staff of Umpire Pemberton, California oil umpire, and has been appointed potential engineer of the Huntington Beach, Richfield and Seal Beach Fields.

* * *

WILSON DOANE, district manager, Dow Chemical Company, St. Louis, Mo., was a Tulsa visitor last week.

* * *

R. B. (IKE) DOWNING, consulting geologist, Wichita, Kans., was a visitor to Tulsa and Oklahoma City, Okla., last week.

* * *

CHARLES W. GRIMES, oil operator, has returned to his Tulsa office from a recent trip to Ohio and other eastern states.

* * *

JAMES H. LEWIS has been elected president of the Sunset Oil Company of California and will maintain offices in Los Angeles.

* * *

H. A. JENKINS, president, Zero Hour Bomb Company, Tulsa, is on an extended tour of the East in the interests of his company.

* * *

R. L. GINTER, Ginter Chemical Company, Tulsa, is again at his office after being confined to his home for a time with sickness.

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J. R. MILLER, independent operator and landowner of El Paso, Tex., was a business visitor in Fort Worth, Tex., during the past week.

* * *

W. L. CONNELLY, chairman of the board, and HORACE C. FITZPATRICK, of the Sinclair Prairie Oil Company, Tulsa, were business visitors to the company's offices at Houston, Tex., the past week.

EDMUND A. CUNNINGHAM has been transferred from the New York offices of the Shell-Union Oil Corporation, to the San Francisco offices of the Shell Oil Company of California.

* * *

A. L. ACKERS, district geologist of the West Texas district for Stanolind Oil & Gas Company, is moving from Midland to Fort Worth to become division geologist for the Texas-New Mexico division.

* * *

PHIL J. LEHNHARD, of Dowell, Incorporated, has been transferred from the Midland, Tex., district office to Tulsa. BOYD F. KOEPKE is being transferred from the Tulsa to the Midland, Tex., office.

* * *

FREDERICK T. McKEAN, of Montreal, Canada, has been elected president of the Champlain Oil Products, Ltd. He succeeds HARRY SNYDER, who continues as chairman of the board of the company.

* * *

ALF. G. HEGGEM, president, Oil Well Improvement Company, Tulsa, has just returned from a trip to Washington, D. C., on company business. On his way west he stopped at Massillon, Ohio, to visit with his parents.

* * *

J. L. SHOEMAKER, auditor, Stanolind Pipe Line Company, addressed the Petroleum Accountants Society of Tulsa on the evening of April 26 on "New Accounting System for Pipe Lines and Group Plan of Depreciation."

* * *

MISS FLORENCE LUNDELL, librarian of the technical department of the Tulsa Public Library, and president of the Oklahoma Library Association, has been active at the annual meeting of the association held in Tulsa April 24 and 25.

ARTHUR STEPHENS, managing director of the British Sun Oil Company, Ltd., London, England, is now in the United States visiting the Philadelphia, Pa., headquarters of the Sun Oil Company.

* * *

R. DE CHICCHIS, formerly geologist for the Southern Crude Oil Purchasing Company, but more recently a consulting geologist at Midland, Tex., and ALLEN HARGRAVE, formerly land man for the Simms Oil Company, have formed a partnership and opened offices at Midland.

* * *

E. H. MEHTIEFF, petroleum engineer with Giavneft Oil Trust, Moscow, U.S.S.R., together with N. TITKOFF, petroleum engineer, and L. SCHWARTZ, petroleum engineer, with Amtorg Trading Corporation, Los Angeles, Calif., is making a tour of the Mid-Continent oil fields.

* * *

L. P. ST. CLAIR, president, STANLEY MORSHEAD, vice president, and W. B. ROBB, secretary of the Independent Oil Producers Agency, the oldest co-operative organization in California, were re-elected to their respective offices at the annual meeting held in Bakersfield recently.

* * *

DR. J. BENNET HILL has been appointed manager of the development department of the engineering and development department of the Sun Oil Company. H. F. ANGSTADT, of the same department has been appointed manager of the technical service division. Doctor Hill for several years was chief chemist of the Atlantic Refining Company.

* * *

RAYMOND M. YOUNG, general manager of Shand & Jurs Company, Berkeley, Calif., has left with his golf clubs for a six weeks' eastern trip. He will contact the company's offices and distributors as well as oil companies in New York, Chicago, Detroit, Philadelphia, Cleveland, Pittsburgh, St. Louis, Kansas City and Denver.

* * *

DR. CHARLES N. GOULD, Norman, Okla., was a Tulsa visitor last week-end.

* * *

JACK LAMB, connected with the Gulf Refining Company, has returned to Fort Worth, Tex., from Florida and Cuba.

* * *

R. H. HENDERSON, with the Jeffers Oil Company, which has headquarters at Midland, Tex., has been transferred to Fort Worth.

* * *

L. H. FREEDMAN is now Michigan representative of the Snowden-McSweeney Pipe Company, with headquarters at Mount Pleasant, Mich.

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F. B. BIMEL, petroleum engineer, of Toronto, visited Calgary, Alberta, recently to confer with officials of the Royalite Oil Company in regard to production matters.

* * *

A. J. STEELE, formerly with the International Supply Company at Hobbs, N. Mex., is now representing the Western Supply Company in Fort Worth, Dallas and part of North Texas. His headquarters will be in Dallas.

* * *

GLENN HARROUN, production superintendent for the Texas division for the Sinclair Prairie Oil Company, Fort Worth, spent a few hours at the company's offices at Houston, Tex., the past week. He made the trip by air, flying his own ship.

DO YOU REMEMBER?

From The Oil and Gas Journal Files

25 Years Ago

May 1, 1910

The Barnsdall Oil Co. is the most active operator in Osage County, Oklahoma, after a long period of inactivity.

April completions in Kansas were confined to Allen, Neosho, Wilson, Montgomery and Chautaqua Counties. Forty wells were completed, including 4 small oil wells, 26 gas wells and 10 dry holes.

Wells starting at 1,500 to 2,400 bbls. a day have recently been completed in the McCloskey sand in the Robinson, Ill., Field.

20 Years Ago

April 29, 1915

The site is being cleared for the Prairie Oil & Gas Co. and Prairie Pipe Line Co.'s proposed fine office building in Independence, Kans.

Abraham H. Simons, pioneer Pennsylvania oil man and merchant, dies in Bradford, Pa. He was the father of A. R. (Ike) Simons, well known Oklahoma operator.

Cushing, Okla., operators are becoming bullish, and some of them have turned down offers to purchase their stored production at the market, demanding 15 cents per barrel premium. The posted price is 40 cents per barrel.

10 Years Ago

April 30, 1925

One hundred and six third sand wells in the Smackover, Arkansas, Field are producing 280,000 bbls. per day, or an average of 2,641 bbls. per day per well. The largest current producer is flowing 18,000 bbls. per day.

T. J. Donoghue, vice president of the Texas Co., and R. V. Hanrahan, president of the Humble Pipe Line Co., prominent Houstonites, who have been seriously ill, are convalescing.

There is a shortage of crude oil in Oklahoma and owners of oil in storage are selling some of their stocks.

Michael Martin Sweetman, president of the Southern Natural Gas Co., dies in San Antonio, Tex.

W. L. (BERT) CHILDS, president of the Reed Roller Bit Company, Houston, Tex., was a business visitor in Dallas, Tex., during the week.

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ALFRED S. BROGDEN has been named representative in the Southwest district for the South Chester Tube Company and will have headquarters at Fort Worth, Tex.

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DR. C. T. FELT and MRS FELT, of Franklin, Pa., are visiting in Tulsa this week at the home of their son, HOWARD FELT, secretary of the Warren Petroleum Company.

• • •

JAMES LEE, secretary to JOHN McFADYEN, vice president in charge of the western division of the Ohio Oil Company, is in Chicago on a vacation from his office duties in Casper, Wyo.

• • •

OTTO D. DONNELL, president of the Ohio Oil Company, visited the Casper, Wyo., headquarters of the company on his way home from a trip to Salt Lake City, Utah. Mr. Donnell was accompanied by Mrs. Donnell.

• • •

O. D. CRITES and LES STEGALL, both in the Shell Petroleum Corporation's crude oil purchasing department, Houston, Tex., have returned to their headquarters after a business trip to East Texas and Fort Worth, Tex.

• • •

DR. E. R. LEDERER, vice president of the Texas Pacific Coal & Oil Company, Fort Worth, Tex., who is on special assignment with the Planning and Coordination Committee, Washington, D. C., has returned to that city after a business trip to Fort Worth.

• • •

J. B. W. GARDINER, who was recently in Oklahoma representing the Champlin Refining Company's gasoline line to Nebraska, has returned to New York.

• • •

W. A. MARTIN, general superintendent of the Sinclair Prairie Oil Company, Tulsa, was a visitor to the company's offices at Houston, Tex., last week.

• • •

MARION D. SMITH, manager of the Continental Supply Company's Rocky Mountain division, Casper, Wyo., is on a trip through the black oil fields of northern Wyoming.

• • •

L. R. THAWLEY, production engineer of the Phillips Petroleum Company, has been made division production engineer for Kansas, with headquarters at Wichita. He will succeed ROBERT WRIGHT, transferred to Oklahoma City, Okla.

• • •

J. P. (JIM) MORONEY, son of MR. and MRS. J. J. MORONEY, of Okmulgee, Okla., has been transferred by the Sinclair company from the Enid, Okla., territory to Casper, Wyo. He will succeed the late FRANK B. TAYLOR. Mr. Moroney's territory embraces Wyoming, Montana, Colorado and parts of the Dakotas.

• • •

DR. JOSEPH E. POGUE, consulting petroleum engineer, has been engaged by the Mission Corporation to survey the properties of the Tide Water Associated Oil Company and the Skelly Oil Company. The holdings of the Mission Corporation consist of the common stocks of Tide Water Associated and Skelly Oil. Doctor Pogue was in Tulsa last week.

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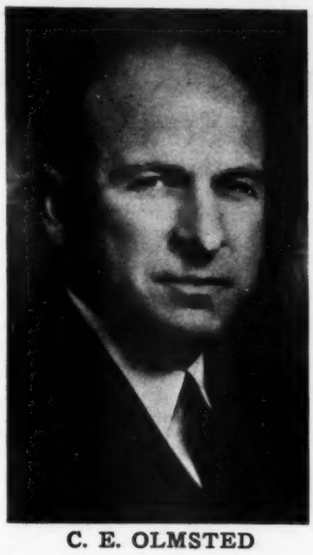
MAKING an inspection tour of the company's properties in the Southwest, a group of directors of the Continental Oil Company, headed by DAN J. MORAN, president of the company, spent a few days in Houston, Tex., the past week. Members of the party included THOMAS S. LAMONT, ARTHUR B. LAWRENCE, J. WILLIAM SMALLWOOD, CARL H. PFORZHEIMER, and JUDGE CHARLES F. AYER, all of New York.

He Went Up By the Engineer Route

C. E. Olmsted, president and general manager of the Texas Company (California), went up to that office by the engineering route. He attended Leland Stanford University in California and Columbia University in New York, graduating from the latter institution in 1915 with the degree of civil engineer. He held various engineering positions in New York and California until 1918, when he entered the U. S. Army and served for a year in the World War.



C. E. OLMSTED

Upon being mustered out in 1919 Mr. Olmsted started to work for the Texas Company in New York and he remained with that organization until 1923, holding various positions in the engineering and refining departments. In 1923, he resigned to go to the California Petroleum Corporation in Los Angeles as manager of the engineering, natural gasoline, pipe line and refining departments. Until 1927 he held various positions in that company, being elected vice president on July 10, 1924, and a director on December 29, 1925.

In 1928 the California Petroleum Corporation was absorbed by the Texas Company and Mr. Olmsted became vice president in charge of refining, and later vice president in charge of producing for the Texas Company (California).

In January, 1929, Mr. Olmsted was named vice president and general manager of the Texas Company (California), and in January, 1934, was elected president and general manager. He was born in Santa Paula, Calif., September 4, 1890.

G. W. SANDERS, of Chicago, in charge of wholesale sales for the Pure Oil Company, went to Muskegon, Mich., last week by airplane to visit WALTER E. ANDERSON, president and general manager of the Naph-Sol Refining Company. He was piloted by D. H. YOUNG, making the flight in the Pure company plane.

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W. L. ADKISSON, H. A. BARDEEN, LIONEL T. BARNESON, R. A. BROOMFIELD, W. S. FISHER, EARL FLEISHER, A. S. JOHNSTON, C. W. LORD, S. B MOSHER, C. C. SPICER, LAWRENCE WEILL and LLOYD WILLIAMSON were recently elected directors of the Oil Producers Agency of California for a period of one year.

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COL. HARLEY W. LAKE, pilot and goodwill representative of the Socony-Vacuum Oil Company, and M. D. RICE, of Detroit, Mich., marketing assistant of the White Star division, visited in Muskegon, Mich., last week, taking R. H. WILCOX, resident manager for the White Star, and WILLIAM BRIMMER, a local agent, for a short flight over the city.

• • •

MR. and MRS. VIRGIL M. VOORHEES, and MR. and MRS. MORRIS VOORHEES, formerly of Muskegon and Mount Pleasant, Mich., have established summer residences in the cottage colony on Crystal Lake, Montcalm County, near the new Crystal oil field. Messrs. Voorhees have been engaged in contracting and independent operations in several Michigan fields for the past few years.

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R. R. DURKEE, formerly in the San Antonio geological department of the Stanolind Oil & Gas Company, has been transferred to the Gulf Coast district, with offices at Hastings, Tex. F. H. SCHOUTEN, district geologist in East Texas, with headquarters at Tyler, is moving to Midland to become district geologist in West Texas and New Mexico. GENTRY KIDD, Midland, is to become district geologist in the Panhandle with headquarters at Pampa. R. B. MITCHELL, North Texas geologist, is being transferred to Tyler as district geologist in East Texas.

GEORGE FOSTER, secretary and treasurer of the Devonian Oil Company, Tulsa, was a business visitor to Houston, Tex., last week.

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CARL E. REISTLE, JR., chairman, East Texas Engineering Association, Kilgore, Tex., reports the arrival of a 9-pound boy at his home last week.

• • •

C. W. WOODWARD, formerly with the Texas Company, has joined the Republic Supply Company in the capacity of salesman out of Tulsa.

• • •

CECIL KELLER, formerly scouting the Wichita Falls district for the Texas Company, with headquarters at Wichita Falls, has been transferred to Gainesville.

• • •

S. F. SHAW has been retained as consulting engineer by the American Oil & Refining Company, and is making headquarters at the Skirvin Hotel, Oklahoma City.

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WILLIAM C. WOLFE, vice president in charge of sales of Reading Iron Company, Philadelphia, Pa., has returned home following a trip to Houston, Tex., and Tulsa.

• • •

C. H. CROMWELL is now with the Corpus Christi Refining Company, Corpus Christi, Tex. He was formerly assistant superintendent of the Old Dutch Refinery, Muskegon, Mich.

• • •

CLOYD A. HALE, superintendent of the Canadian Oil Companies, Ltd., refinery at Petrolia, Ontario, was in Cleveland recently attending the funeral of F. B. FRETTER, president of the company.

• • •

L. R. (LEE) SLATER, formerly general superintendent of Independent Oil & Gas Company and Dary Petroleum Corporation, has just been released from Saint Anthony's Hospital at Oklahoma City. He was injured in the Oklahoma City Field several weeks ago. He recently moved to Oklahoma City from Tulsa.

• • •

ELMER L. WYCOFF, representative for the National Tube Company in Texas, with headquarters at Fort Worth, has been transferred to Bakersfield, Calif., where he will hold the same position. ANDY C. TEMMELL has been transferred from Tulsa to Fort Worth to fill the vacancy made by the transfer of Mr. Wycoff.

• • •

NEAL H. ANDERSON was elected president of the Oil Producers Agency of California at the annual election and R. A. BROOMFIELD, J. J. DOYLE, LAWRENCE VANDER LECK, ANGUS CRITES and LLOYD WILLIAMSON vice presidents for the ensuing year. RUSH M. BLODGET was elected executive president and R. E. HAVENSTRITE was elected secretary-treasurer.

• • •

HARRY MILTON, division land man for Stanolind Oil & Gas Company at Worth Worth, Tex., is being transferred to Tulsa, and W. T. SMITH, in the land department at Fort Worth, will succeed Mr. Milton. E. H. STAFFORD has been made division land man of the new Gulf Coast division. A. L. BYRD, district land man of the East Texas district, is being transferred to Houston, Tex.

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A. L. SELIG, manager of the exploration department of the Texas-New Mexico division of the Stanolind Oil & Gas Company, Fort Worth, Tex., will move to Houston about the middle of May, becoming manager of the newly created Texas-Louisiana-Gulf Coast division. W. J. NOLTE, assistant head of the exploration department at Fort Worth, has been promoted to acting division manager of that department in the Texas-New Mexico division. A. L. McCORKLE, Fort Worth, vice president in charge of the Texas-New Mexico division, will have charge of the new division.

NATURAL GAS DEVELOPMENTS

Turner Valley Gas Waste Is Materially Reduced

CALGARY, Alberta, Apr. 27.—Despite conservation measures of the Alberta government, the daily wastage of natural gas from the Turner Valley Field still approximates 200,000,000 to 225,000,000 feet, according to recent estimates. Of the 250,000,000 feet a day produced, an average of 25,000,000 feet is taken by the Canadian Western Natural Gas, Light, Heat & Power Co. of Calgary. Approximately 5,000,000 feet a day is stored in the Bow Island sands where repressuring is being continued. The surplus residual gas is burned in flares. Wastage since Royalite's No. 4 first penetrated the limestone in 1924 is believed to have reached an aggregate of billions of feet, the value of the waste gas under peak production being estimated as high as $100,000 a day.

The wastage has been materially reduced as a result of conservation measures under which the gas flow is prorated. Purchase of adjacent deep lime producers by Royalite Oil Co. has permitted more efficient operation, particularly in the old central field. Due largely to the operation of the two gasoline absorption plants, recovery of naphtha from wet gas is the most efficient in years. About 3,200 bbls. a day is obtained from the present flow of around 250,000,000 feet compared with 4,300 bbls. from the flow of 580,000,000 feet in 1931. Completion of Royalite Oil Co.'s new absorption plant in South Turner Valley this summer is expected to increase the naphtha recovery in that area.

WICHITA FALLS SUPPLY

WICHITA FALLS, Tex., Apr. 29.—Wichita Falls can obtain an ample supply of gas from the Jack County fields for at least 25 years, according to information obtained by a group of city officials who visited that section.

The officials asked operators of that area to supply them with detailed data concerning the potential output of 23 gassers in the Bryson Field to be used in preparing a formal application to the federal government for a PWA loan to be used in construction of a municipal gas system.

Alderman Taylor said preliminary information obtained in Jack County showed the fuel was of high quality and there was sufficient natural pressure to put the gas to the Wichita Falls gates without the use of pumps.

MINNEAPOLIS CHANGE-OVER

Change-over from 550 B.t.u. manufactured gas to 800 B.t.u. mixed gas which began in Minneapolis, Minn., February 4, is nearing completion. Minneapolis and suburbs were divided into 20 districts, with an average of 5,500 customers each, and 300 men, divided into crews, were added to the company's pay roll for the work of changing over appliances to the use of the new mixture.

HELIUM SHIPMENTS

RAPID CITY, S. D., Apr. 27.—Two carloads of cylinders of compressed helium gas—half the total necessary for the 1935 National Geographic - Army stratosphere flight—reached here today and two more are on the way from the gas fields of Amarillo, Tex.

GAS OFFER DECLINED

ST. THOMAS, Ontario, Apr. 27.—The city council has taken no action on a proposal of Bon Jasperson of Kingsville to supply natural gas to the municipal gas system in wholesale quantities.

Panhandle Gas Regulation Substitute Is Passed by the Texas State Senate

AUSTIN, Tex., Apr. 29.—The Senate passed the Small gas conservation bill as a substitute for one which had been sent over from the House.

Two years ago a gas bill passed the legislature, which became known as the "sour gas law." Under the sour gas law, the use of natural gas in stripping plants was permitted.

Senator Small said: "I put Senators from other districts on notice, that this bill affects only my district. It will not affect wells which produce a distillate. If you want to regulate them, that's your business. This bill will absolutely stop the waste of gas in my district."

The wells producing a distillate are in South Texas. Its principal source at present is the Pledger Field, in Brazoria County. The owners are trying to exempt this district from gas waste prohibition.

Ratable Allowable

Probably the most important provision of the bill requires the Railroad Commission to allocate to each well in a common reservoir a ratable daily allowable production. Unlike the House bill, the Small bill does not prescribe a rigid formula for prorating the market for oil from a common pool. It leaves a good deal to the discretion of the commission, which would be required to take into account the size of the tract, segregated, with respect to surface position and common ownership of gas, on which each well is located. It would take into account the relation between the daily producing capacity of each well to the aggregate daily capacity of all wells of the common pool, together with all other factors, to the end that each well's allowable shall bear the same relation to the daily total taking that its drainage area bears to the total drainage area of all the wells.

It is for the commission to determine the drainage area of each well, subject to the obligation, however, of taking into account the productive capacity of the well, formation pressure, lineal extent of such formation and the well bore's structural position.

Small said no other bill had ever contemplated a greater destruction of property and curtailment of revenue than his measure to put an end to the terrible loss of gas, a highly valuable natural resource. He said its enactment would cause a $5,000,000 sacrifice in abandoned stripping plants, those from which small quantities of gasoline had been extracted from huge amounts of gas. Carbon black plants worth $2,000,000 would also be lost to their owners. The revenue from these plants would be gone forever, he asserted. He said the sacrifice was necessary to obtain gas conservation and end the wastage.

The Small bill took the place before the Senate of the House bill. It provides that wells producing 200,000 feet of gas daily in open flow can not be restricted to less than 50,000 feet daily and those under 200,000 feet to not less than 25 per cent of its open flow. Wells in common reservoirs of sweet and sour gas cannot produce over 25 per cent of daily capacity.

Commission to Make Rules

The main purpose is to prevent use of sweet gas for other than fuel and illumination, and assigning sour gas to carbon manufacture. The bill makes specific definitions of all terms incident to the production and marketing of gas and empowers the Railroad Commission to make stringent rules to protect all strata in drilling and plugging.

A gas well is defined as producing more than 100,000 feet of gas to each barrel out of the same horizion and an oil well as a well which produces over one barrel of oil to the gas limit named. Sour gas is defined as containing more than one-half of hydrogen sulphide per 100 feet or more than 30 grains of total sulphide to 100 feet or any gas unfit for generating light or fuel. Sweet gas is defined as anything but sour and casinghead gas.

The bill is strict in limitations of wastes which are unavoidable incidents in the drilling of wells and in the use of gas in producing oil. It allows the gasoline content to be extracted from sweet gas, sour gas and casinghead gas, but requires that when that has been done the residue shall be put to the other lawful uses prescribed in the bill for each.

In its equity aspects, the bill is designed to make appurtenant to every well all the gas that is contained within its drainage area, using the potentiality of the individual well and the area of the surface that is attached in ownership to the ownership of the well as the major factors in determining the allowable of each. Those who own acreage in a proven gas field which they have not developed by drilling must drill a well and produce gas to bring themselves under the allowances of the bill. When they do that they entitle themselves to pipe line connection and to their ratable part of the market the pipe line serves. It is to the well that production is allotted. But all such are given permission to make agreements and contracts, subject to the attorney general's approval, that are designed to enable them to obtain the value of their share in a common pool.

SAN ANTONIO RATE

AUSTIN, Tex., Apr. 29.—The Railroad Commission has been petitioned by the San Antonio Public Service Co., subsidiary of American Light & Traction Co., to determine a fair and reasonable charge for natural gas at the city gates of San Antonio. Under an order issued by the commission last November a rate of 34 cents per 1,000 feet for domestic gas at city gates of takers from the United Gas Public Service Co. in South Texas, including San Antonio, was fixed as "fair, just and reasonable." Under a contract made some years ago with the Latex Co., then delivering gas to the city gates, San Antonio Public Service Co. is paying 35 cents.

MEMPHIS AWAITS GUESTS

MEMPHIS, Tenn., Apr. 29.—Memphis is ready for natural gas men, who will assemble May 6 for a four-day meeting of the A.G.A. Natural Gas Department—the first separate convention since 1933. The convention dates, May 6-9, fall in the midst of the fifth annual Memphis Cotton Carnival which will provide more than the usual entertainment. Headquarters are at the Peabody Hotel.

W. J. O'Brien, president of Memphis Power & Light Co., heads the general arrangements committee, and J. J. Brennan, of the same company, is chairman of entertainment.

Gas Line Extensions Planned in Michigan

MUSKEGON, Mich., Apr. 29.—The request of the Consumers Power Co. to build and operate additional natural gas pipe lines in eight central and eastern Michigan counties is being considered by the Michigan Public Utilities Commission. The largest addition to the company's present 60-mile line serving Midland, Saginaw and Bay City from the Broomfield Township, Isabella County Field, would be the proposed 25-mile extension to the Hinton-Millbrook-Belvidere Townships Field in Mecosta and Montcalm Counties for the production of six operators, including Michigan Exploration Co. of Michigan, Gordon Oil Co. of Mount Pleasant, Columbia Oil & Gas Co. of Kalamazoo, F. Irwin Bryan and Harry T. Martin of Detroit, and Dr. Virgil R. D. Kirkham and James C. Graves of Saginaw.

These operators closed a contract with Consumers Power Co. to sell the output of eight completed wells with an aggregate of more than 50,000,000 feet a day and any future production at 15 cents per 1,000 feet in the line.

Preliminary hearing on the organization of the Petroleum Transportation Co., a new $50,000 Michigan corporation formed by the six operators, and on the Consumers company's application for a permit to extend its major line has been held. The Consumers company also is seeking permits for extensions in Saginaw, Bay, Tuscola, Isabella, Gratiot and Clare Counties.

DALLAS-FORT WORTH TESTS

DALLAS, Tex., Apr. 29.—E. R. Weaver, chief gas chemist of the U. S. Bureau of Standards, is conducting tests on gas supplied Fort Worth and Dallas, Tex., in laboratories of the Texas Christian University at Fort Worth. On the basis of synthetic gas tests at Washington, D. C., laboratories of the bureau, Mr. Weaver advised the city council of Dallas that elimination of gas dilution at the Joshua stabilizing plant of the Lone Star Gas Co. would cut consumers' bills appreciably. A committee of gas experts retained by the city of Dallas, however, supported the Lone Star's operation of the Joshua plant, which reduces the high heat content of gas received from certain fields to make these supplies interchangeable with gases from other fields. The committee of experts held that the plant's operation was in the interest of efficient gas service and representatives of the Bureau of Mines concurred.

16,000,000-FOOT GASSER

BRADFORD, Pa., Apr. 27.—The Cunningham Natural Gas Co. completed its second well on the Maxwell farm in Allegany County, New York, this week. It had an initial gas production of 16,000,000 feet. The first well completed started at 8,000,000 feet. The company is composed of John Cunningham of Rixford, Pa., and Frank Calkins and Fred Gallup of Bradford. The wells are surrounded by leases owned by Bradford operators.

LUBBOCK LOAN DISAPPROVED

WASHINGTON, D. C., Apr. 29.—The Public Works Administration announced the application of Lubbock, Tex., for a $360,000 loan for a municipal gas system has been disapproved by the PWA engineering and finance sections. The legal section, however, held the application is satisfactory, but new information will have to be presented before the application is again considered.

FIELD PROBLEMS FROM READERS

Edited by Thomas F. Smiley

This department is conducted in order that men connected with the drilling, producing and transporting branches of the petroleum industry may obtain aid in solving problems that confront them in their work. Readers are invited to send questions freely. These questions will be placed in the hands of persons capable of answering them authoritatively, and the answers, based on the best available information, will be published.

Each question should give as much detail as possible, especially if it involves depths of sands, types of sands and operations on adjoining or nearby properties. The source of questions will be considered confidential, and only the initials of the sender will be published. Questions involving patented processes, intricate formulas or estimates of cost cannnot be answered. If an immediate answer is important, one will be given by mail when the writer requests it.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or improved old ones.

How Engineer Finds the Correct Counterbalances for Wells

What is the method used by engineers in calculating the counterbalance required for the most effective operation of a pumping well? Is the function of the counterbalance important enough to demand close figuring in order to determine precisely what the counterbalance force should be for a given well? Tell me, please, what the relative advantages of rotary counterbalances and reciprocating counterbalances are.—S. Y. D.

Counterbalancing is a most important factor in achieving high power efficiency and its consequent economy. It diminishes stresses on equipment and allows smaller power generating and transmitting machinery to be used. For the following answer to your question this department is indebted to Hallan N. Marsh, production engineer for the General Petroleum Corp.:

"Effective counterbalance force, theoretically, should equal the weight of rods plus half the weight of oil on the plunger. By the use of the dynamometer, correct counterbalance can be determined more accurately, account being taken automatically of friction and acceleration forces and lightening effect of gas in the tubing. This correct force is the average of mean weight on the upstroke and mean weight on the downstroke. Providing of such a counterbalance results in the motor or engine doing the same amount of work on the downstroke as on the upstroke. In a well having an upstroke load of 12,000 pounds on a downstroke load of 8,000 pounds, the correct counterbalance is 10,000 pounds, which results in a net force on the machinery equivalent to only 2,000 pounds on each stroke, whereas use of no counterbalance would have resulted in a force on the machinery equivalent to 12,000 pounds, and an inadequate counterbalance having an effective force of 8,000 pounds, (equal to weight of rods) would result in a force on the machinery of 4,000 pounds or twice that required with the adequate balance.

"Rotary counterbalances are rapidly replacing reciprocating balances. Reciprocating balances are satisfactory for wells run at very slow speed but are unsatisfactory at higher speeds. Due to acceleration forces, the reciprocating counterbalance becomes ineffective at the bottom of the rod stroke, and excessively effective at the top of the rod stroke. Rotary balances produce a uniform static effect at all speeds and at all parts of the stroke, and in addition supplement the counterbalancing force with a flywheel effect which reduces speed fluctuations at each dead center position of the crank.

"The effective force produced by a rotary counterbalance is not ordinarily equal to its dead weight, due to the fact that its center of gravity does not coincide with the center of the crank-pin, in order that there may be an advantageous leverage ratio; the effective weight is then greater than the dead weight. Since rotary counterbalances are often of very irregular form, it is difficult to compute location of the center of gravity. The American Petroleum Institute has therefore established a rating form for rotary counterbalances upon which manufacturers should be requested to submit information as to the effective force developed by their cranks, with various numbers of weights and with the crank-pin in the several possible positions. By computing, or preferably measuring, the required counterbalance and securing from manufacturers the data as to the force produced by the cranks, the selection becomes a simple and definite engineering problem."

How Long Oil Supply Will Last Is a Matter of Conjecture

I am following the situation in the oil industry with care, and the subject of oil reserves is of vital importance to my study. I would appreciate it if you would send me some authoritative statistics on the oil reserves of the United States and of the world, and the period of years before the visible supply of oil will be exhausted.—H. K. M.

It is suggested that you obtain from the U. S. Government Printing Office, Washington, D. C., a copy of Petroleum Investigation Hearings before committee of the Seventy-third Congress, Part 2, covering the testimony of many experts upon estimated oil reserves in this country.

As to world reserves, consult The Oil and Gas Journal of November 8, 1934, and the Foreign Issue of December 27, 1934. The tabulations you desire are not in any publication that this department knows of, because many foreign countries have not explored vast areas that may contain oil. Some oil fields recently discovered in foreign countries are not outlined or drilled completely.

However, it has been stated that 16 per cent of the world's oil reserves are within the boundaries of continental United States, the rest being scattered through many countries in other parts of the world, but mainly in those lying north of the equator.

There should be a definite distinction made between estimated reserves and visible supply for daily run to stills. For instance, it is estimated that the reserve of oil in this country is 13,300,000,000 bbls., or 14.5 years' supply at the present still-run rate of 2,500,000 bbls. per day. But it is estimated that it will require at least 30 years actually to recover this oil from the underground reservoirs.

From this statement it will be realized that if there is any increase in the daily demand rate there will be an actual shortage of available oil to run to stills in a few years.

The oil industry is not restricted to the present methods of producing oil from underground reservoirs and an upward trend in prices would encourage the application of some of the many known processes to increase rate of recovery and the development of others now only partly worked out. Also the extraction of gasoline, now placed at approximately 48 per cent from each barrel of crude, can be increased to over 100 per cent by the hydrogenation process.

So you will understand that to attempt to estimate "the period of years before the visible supply of oil will be exhausted" becomes very involved when all factors are considered. There is plenty of crude oil in reserve to provide motor fuel and lubricating oils for the automobiles now upon the roads and it is predicted by some that by the time they are worn out and the supply of gasoline is declining some other type of motive power will be available so that the present method of extracting and refining petroleum may no longer be profitable or necessary.

Why Was It Called That?

HOIST

The hoist is a familiar sight in the oil field, although it is not known by that name. The winch used in pulling a well and the boom used in pipe line work are among the more common forms of the hoist. The word "hoist" is a verb also, and it is the past tense of an old nautical verb meaning to hoise, or raise tackle. Hamlet jests, "'Tis the sport to have the enginer hoist with his own petar" (that is, blown up by his own gunpowder). In the twenty-seventh chapter of Acts, Luke tells how "when they had taken up the anchors they . . . loosed the rudder bands and hoised up the mainsail to the wind and made toward shore."

Finding the Viscosity of Drilling Fluid Is Technical Subject

As the viscosity of a drilling fluid is of great importance in successful rotary operations, I want to ask if you can tell me the method usually employed by production engineers and drillers in determining this quality. Are instruments available for this purpose? I am as much interested in the technical phases of this subject as I am in the bare question of finding out the viscosity, and any information along that line will be appreciated.—G.A.F.

The subject of drilling fluid viscosity probably receives less attention than it should in rotary work. It is an extremely technical one, but as you say you are interested in its technical phases, this department probably can do no better than quote from "The Colloidal Properties of Clay Suspensions," by W. K. Lewis, Lombard Squires and W. I. Thompson, of the Massachusetts Institute of Technology:

"The best way to determine the viscosity of a pure liquid is the use of some form of capillary viscosimeter. If, however, such an instrument be employed for suspensions, or solutions of materials of high molecular weight, difficulties are frequently encountered, probably due to irregularities of flow caused by the fact that the particles themselves have dimensions approaching that of the diameter of the capillary. In such cases a viscosimeter of the falling-ball or concentric cylinder type is advantageous, since the thickness of the liquid layer is far greater; the latter has the further advantage that it can be operated with rates of shear which are approximately the same at all points in the fluid. All instruments of this type measure the torque at some rate of rotation, the viscosity being proportional to the twisting force and inversely to the rate of rotation.

"If in such a torsion viscosimeter the rate of rotation be varied, in testing all pure liquids and many solutions, even of high molecular weight solutes and suspensions, one finds that the torque is proportional to the rate of twist, i.e., to the revolutions per minute. However, many suspensions and colloidal solutions show an entirely different behavior in that, if one plot torque vs. r.p.m., while one still finds a relationship substantially linear, the line no longer passes through the origin, but, if extended below the experimental range, to zero r.p.m. cuts the torque axis at a different point.

"This is called yield point of the fluid. Possession of a yield point thus determined may well be taken as a criterion of plasticity.

"It is clear that for a liquid with zero yield point the slope of the r.p.m.-torque curve is inversely proportional to its viscosity, i.e., directly proportional to its fluidity. For a fluid showing a yield point, the fluidity for a given rate of shear is proportional to the slope of the line connecting the point in question with the origin.

"Because the slope of the r.p.m.-torque line is a measure of the fluidity for fluids with zero yield point, Bingham has suggested that in other cases the corresponding slope be called the mobility. For fluids with zero yield point, fluidity and mobility become identical. For fluids exhibiting yield point the mobility is the fluidity (i.e., the reciprocal of the viscosity) of the fluid for conditions of infinite rate of shear."

MARKET RECORD OF OIL SECURITIES

Active Oil Stocks Listed on New York Stock Exchange

Compiled by Carl H. Pforzheimer Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

1935 High	1935 Low	Week ended April 27 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Dividend rate	Payable or last paid	Dividends paid in 1934	1934 High	1934 Low	1933 High	1933 Low
62¼	48	11,800	62¼	57⅝	62¼	Amerada Corp.	774,875	N.P.	50cQ	4-30-35	$2.00	55⅝	39	47⅝	18½
25⅜	21⅜	10,400	24⅝	23½	23½	Atlantic Refining	2,673,834	$25	25cQ	3-15-35	1.00	35¼	21½	32½	12⅝
9¼	5⅞	38,500	9¼	8⅜	8¾	Barnsdall Corp. A	2,248,795	$5	....	5-11-31	....	10	5⅞	11	3
7¼	3⅜	55,700	7¼	6	6⅛	Columbia Gas & Elec.	11,610,036	N.P.	....	5-15-34	‡ .25	19¼	6⅝	28⅛	9
8¾	6½	36,200	8⅜	7¾	7⅞	Consolidated Oil Corp.	14,218,835	N.P.	14c	10-31-34	.42	14¼	7¼	15¾	5
20	15⅛	33,000	20	19¼	19⅞	Continental Oil of Delaware	4,738,593	$5	12½c	4-30-35	.50	22¾	15¾	19⅝	4⅞
18⅞	11⅜	5,000	15⅜	14⅜	14⅞	General Asphalt	387,149	$10	....	6-15-32	....	23½	12	27	4⅝
3⅜	1½	1,200	2⅞	2⅜	2⅜	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	5⅝	2½	7⅜	1⅞
1⅞	¾	700	1⅜	1¼	1¼	Louisiana Oil Refining	1,302,158	N.P.	....	.....	....	3⅜	¾	4	⅝
12⅞	9½	4,500	12½	11⅛	11¼	Mid-Continent Petroleum	1,857,912	$10	15c	5-15-35	.50	14¾	9⅛	16	3⅝
15⅜	9	4,600	15⅜	13⅝	14	National Supply of Delaware	382,591	$25	....	5-15-31	....	21⅛	10	28⅝	4
12	9¼	20,800	12⅛	11⅛	11¼	Ohio Oil Co.	6,563,107	N.P.	15c	12-15-34	.45	15⅞	8½	17⅝	4⅜
9½	7	700	8⅞	8½	8½	Pacific Western Oil	1,000,000	N.P.	40c	11-30-34	.40	9⅜	5½	9½	3
1⅜	⅝	100	⅞	⅞	⅞	Panhandle P. & R.	198,770	N.P.	....	.....	....	2½	⅝	4¼	⅜
19¼	13¾	27,700	19¼	18⅞	19	Phillips Petroleum	4,154,687	N.P.	25c	3-1-35	1.00	20¾	13⅜	18¾	4¾
11¼	6½	34,800	11¼	10⅛	10¼	Plymouth Oil Co.	1,014,082	$5	25c	3-30-35	75c & 4% Stk.	16¾	7¼	17⅝	6¾
7⅞	5⅞	6,000	7⅞	7⅛	7⅛	Pure Oil	3,038,370	N.P.	....	9-1-30	....	14⅞	6⅛	15⅜	2½
33⅞	29½	500	33⅞	33⅝	33⅝	Royal Dutch N. Y. shares	432,224	$14	$1.35	7-31-34	1.35	39⅛	28⅝	39¾	17⅝
29½	20¾	10,400	29½	27¾	29¼	Seaboard Oil of Delaware	1,204,460	N.P.	15cQ†	3-15-35	1.00	38⅜	20¾	43⅜	15
7⅞	6½	24,400	7½	6⅝	7	Shell Union Oil	13,070,625	N.P.	....	6-30-30	....	11½	6	11⅝	4
78¾	64½	2,400	78	74¾	75¾	Shell Union Oil pfd.	400,000	$100	....	7-1-31	....	89	57	61	28½
18¾	13½	3,700	16½	15¾	15⅜	Simms Petroleum	461,698	$10	50c	2-1-35	.55	17⅛	7¼	12⅝	4⅞
9⅝	6½	2,900	9⅛	8½	8¾	Skelly Oil	1,008,514	$25	....	12-15-30	....	11½	6	9⅞	3
14⅞	11	62,000	14⅛	13⅝	13⅞	Socony-Vacuum	31,019,694	$25	15cQ	3-15-35	.60	19⅞	12½	17	6
33¾	27¾	35,400	33¾	32⅝	33	Standard Oil of California	13,102,900	N.P.	25c	3-15-35	1.00	42⅞	26½	45	19½
25½	23	28,900	25½	24¾	25⅜	Standard Oil (Indiana)	15,941,894	$25	25cQ	3-15-35	1.00	32¾	23¼	34	17
32	28	400	30	28	30	Standard Oil of Kansas	200,000	$10	50cQ	10-31-34	2.00	41	26	39⅞	12¾
43½	35¾	42,300	42½	41	42⅛	Standard Oil of New Jersey	25,740,065	$25	50cSA†	13-15-35	1.25	50⅛	39¼	47½	22¾
69½	60	1,100	69½	67½	69½	Sun Oil	1,733,013	N.P.	25cQ	6-15-35	$1 & 9% Stk.	74¼	51½	59	35
22	16½	28,300	22	20⅝	21½	Texas Corp.	9,486,417	$25	25cQ	4-1-35	1.00	29⅜	19⅝	30⅛	10¾
4¼	3¼	6,300	3⅞	3⅝	3¾	Texas Pacific Coal & Oil	880,703	$10	....	12-31-29	....	6½	2½	6½	1⅜
10½	7⅝	15,100	10¼	9½	9⅝	Tide Water Associated	5,618,672	N.P.	....	2-16-31	....	14⅜	8	11¾	3⅛
95½	84	2,600	95½	94	94	Tide Water Associated pfd.	666,524	$100	$2§	4-1-35	§8.50	87	64½	65¼	23½
18¾	14¾	7,900	18½	18	18	Union Oil of California	4,386,070	$25	25cQ	5-10-35	1.00	20½	11½	23⅜	8½
26¼	20⅞	2,100	25⅝	24⅞	24⅞	Union Tank Car Co.	1,200,000	N.P.	30cQ	3-1-35	1.20	25¾	15⅝	22¾	10½
2⅝	1	200	2	2	2	Wilcox Oil & Gas	424,839	$5	....	5-10-28	....	5¾	2	5½	2

*Ex-dividend. †Plus extras. ‡Payable in preferred stock. §On account of accumulated and current dividends. ‖Distribution 4/75 Mission Corp.

Active Oil Stocks Listed on New York Curb

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1935 High	1935 Low	Week ended April 27 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Dividend rate	Payable or last paid	Dividends paid in 1934	1934 High	1934 Low	1933 High	1933 Low
38½	30½	400	38½	37½	38½	Buckeye Pipe Line Co.	200,000	$50	75cQ	6-15-35	$3.00	38	26	39¾	25
3⅛	1⅝	5,000	3	2⅝	2¾	Carib Syndicate	799,020	25c	....	.....	....	5½	1½	7¾	¼
157	115	100	124	123½	124	Chesebrough Mfg. Co.	120,000	$25	$1Q†	3-29-35	11.50	150	116	129	71
1½	¾	24,800	1½	1¼	1⅜	Cities Service	37,804,394	N.P.	....	6-1-32	....	4¼	1¼	6¼	1⅛
⅛	⅛	400	⅛	⅛	⅛	Colon Oil	2,200,000	N.P.	....	.....	....	3¼	½	4	¼
⅞	⅝	1,000	⅝	⅜	⅜	Cosden Oil	399,687	$1	....	.....	....	3⅞	½	3⅞	1⅜
13⅜	10	20,000	13¼	12	13	Creole Petroleum	6,974,356	$5	....	.....	....	14⅜	9⅝	12	4¾
6	4¼	400	6	5⅞	6	Darby Petroleum	509,696	$5	25c	1-25-35	.50	7½	4⅛	8	2⅛
1⅛	¾	No sales ..	..	..	..	Derby Oil & Refining	263,162	N.P.	....	.....	....	2¼	1	2¾	⅞
38	34	200	34½	34	34	Eureka Pipe Line	50,000	$50	$1Q	5-1-35	4.00	37	30	41¾	20
61	50¼	6,300	61	59	59½	Gulf Oil Corp.	4,538,101	$25	....	10-1-31	....	76¾	49¾	62	24
50¾	44	11,400	50⅝	49¼	50¼	Humble Oil & Refining (new)	8,923,935	N.P.	25cQ	4-1-35	$1.25	496	33¼	105½	40
17⅛	15⅜	9,200	17	16½	16½	Imperial Oil of Canada	26,857,152	N.P.	25cSA†‡	12-1-34	.92½	17⅞	12⅝	15⅞	6⅛
4½	3⅝	200	4⅜	4⅜	4⅜	Indiana Pipe Line	300,000	$10	15cSA	5-15-35	.35	6⅞	3⅝	8	3⅛
32	28	9,100	32	30¾	31¼	International Petroleum	14,247,088	N.P.	56cSA†‡	12-1-34	2.28	33⅜	19⅜	23½	8⅞
7⅛	4⅜	12,300	7⅛	6½	6¾	Louisiana Land & Exp.	3,000,000	N.P.	....	.....	....	5	2⅛	2¼	⅞
6¾	3½	200	5⅝	5½	5⅝	Lion Oil Refining	270,000	N.P.	....	10-27-30	....	6	3⅜	9½	1¼
6¼	4½	3,700	5⅝	5¼	5½	Lone Star Gas	5,382,723	N.P.	15c	2-15-35	‖ .16	8⅜	4¼	11⅞	4¾
4⅝	4⅛	2,800	4⅝	4½	4½	Mountain Producers	1,682,182	$10	15cQ	4-1-35	.60	5½	4	6½	2½
14⅝	11¾	4,700	14⅝	13¾	14½	National Fuel Gas	3,810,183	N.P.	25cQ	4-15-35	1.00	18⅛	13⅛	20	10
8	6⅝	500	8	7⅞	8	National Transit	509,000	$12.50	35cSA	12-15-34	.75	9½	7	10	5½
2⅝	2	1,200	2¼	2	2⅛	New Bradford Oil	1,445,202	$5	10cSA	3-15-35	.20	2½	1¾	2⅛	½
2½	1⅜	200	1⅜	1⅜	1⅜	New Mexico and Arizona	1,000,000	$1	....	.....	....	2¾	1	1⅞	½
3⅝	3	No sales ..	..	..	..	New York Transit	100,000	$5	15cSO	10-15-34	.30	4¾	3	4⅞	3
5⅝	5¼	No sales ..	..	..	..	Northern Pipe Line	120,000	$10	25cSA	1-2-35	.50	7	4⅝	6⅛	4¼
2⅛	1¼	3,000	1½	1¼	1⅜	Pantepec Oil	1,608,700	N.P.	....	.....	....	2⅝	⅞	3¾	⅛
1¾	1	200	1¼	1⅛	1⅛	Ryan Consolidated	296,931	N.P.	....	.....	....	3⅜	⅞	4¼	⅝
6½	5⅝	1,600	6½	6¼	6½	Salt Creek Producers	1,496,859	$10	20cQ	5-1-35	.80	7⅞	5½	9¼	3½
24⅞	21⅝	1,900	24⅞	24¼	24⅝	South Penn Oil	1,200,000	$25	30cQ	3-30-35	1.20	26½	17½	22⅛	11
4¾	3⅞	300	4¾	4⅝	4¾	Southern Pipe Line	100,000	$10	15cSA	3-1-35	.25	5½	3½	6	2⅛
52¼	45¼	No sales ..	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	$1Q	4-1-35	5.00	47	41	43	24½
21⅝	18	3,200	19	18¾	18¾	Standard Oil of Kentucky	2,606,983	$10	25cQ†	3-15-35	1.50	18⅜	14⅝	19¼	8⅝
10	7¾	100	9¾	9¾	9¾	Standard Oil of Nebraska	190,822	$25	....	6-20-34	.50	16⅞	8¼	20½	11
16½	11½	2,800	14⅞	14¼	14½	Standard Oil of Ohio	753,740	$25	....	1-3-33	....	28½	12¼	41	15½
1¼	1	6,200	1¼	⅞	⅛	Sunray Oil	1,610,810	$1	....	4-15-31	....	2	11/16	1½	¼
6⅞	5	500	5¾	5⅝	5¾	Texon Oil & Land	936,028	N.P.	15cQ†	12-29-34	.90	11	4⅜	13¾	6¼

*Ex-dividend. †Plus extras. ‡Payable in Canadian funds. §Includes 50 cents on old $25 par value stock. ‖Payable in preferred stock.

Note—In comparing highs and lows for the several years in the two tables, it will be necessary to take into consideration cases where there have been stock split-ups.

Michigan Fields

(Continued from Page 105)

produced 123 bbls. during the first 16 hours after treatment and was estimated good for 150 bbls. a day. Dundee limestone was struck at 2,554 feet and drilling ended at 2,773 feet. A. R. Nelson, trustee, plugged and abandoned No. 1 Victor Nelson, NE NE SE Section 33, West Branch Township, after drilling into bottom water in the Dundee topped at 2,520 feet.

Acid treatment increased the output of two other previously completed Ogemaw County wells, No. 1 Price in Section 31, Churchill Township, which made 220 bbls. a day after being shut in for several weeks for lack of pipe line facilities, and R. L. Hill's No. 1 Jaqua in Section 6, Mills Township, which flowed 44 bbls. in 30 minutes. M. J. Ingold's No. 1 Grover Zettle, in Section 24, Ogemaw Township, at the northwestern edge of the area, has been making as high as 50 bbls. an hour as one of the biggest wells in this field, 50 miles north of the Mount Pleasant area.

Dry Holes

The possibility of connecting the Sherman-Broomfield gas area with Vernon gas production was discouraged by failure of the two gas tests, namely: Nottawa Oil & Gas Co.'s No. 1 Jacob Weber, NW NW NW Section 22-15n-5w, Nottawa Township, and W. Hunter Atha's No. 1 Melissa Larrance, C NE SE Section 36-16n-5w, Gilmore Township. Isabella Oil Co., Inc.'s No. 1 Dora L. Failing, NE NE SW Section 33-15n-3w, Denver Township, failed as a Dundee oil test although half a mile south and west of good producers.

Arbaugh Brothers plan to abandon No. 1 Aldrich, in Section 22, Broomfield Township, after long unsuccessful attempts to clean up a bad fishing job and drill into the Michigan Stray gas sands. Two strings of tools are in the hole at 1,085 feet.

Elba-Duplain Oil Syndicate's No. 1 Archie L. Stratton, NW NW NE Section 4-8n-1w, Duplain Township, Clinton County, is expected to be abandoned after striking water in the Dundee below 3,000 feet.

Nearing Completion

Chapin Oil & Gas Co.'s No. 1 Sutliff, in Section 16-9n-1e, of Chapin Township, Saginaw County, about 6 miles east of the village of Ashley, shut down to run casing after striking a light show of oil in the Dundee limestone.

State Lease Sale

Leases on about 6,000 acres of state land will be put up at auction by the lands division of the state conservation department in Lansing on May 6. Acreage in 10 counties, including 1,337 in Ogemaw, 1,568 in Arenac, 200 in Mason, 40 in Mecosta, 400 in Missaukee, 329 in Montcalm, 360 in Oceana, 442 in Osceola, 320 in Saginaw and 760 in Wexford included mostly in wildcat areas.

DEATH OF L. C. VAN VLECK

L. C. Van Vleck, aged 82 years, a pioneer Pennsylvania and Indian Territory oil producer, died at his home in Easton, Md., on April 23.

He started his oil career in Pithole, Pa. and pioneered in the Shannopin District, and later operated in West Virginia and Ohio. With his brother, the late George H. Van Vleck, he organized and operated the Paragon Refining Co. in Toledo, O. Mr. Van Vleck was one of the early operators in the Nowata, Okla., district with Jesse Graham as a partner. A son, L. C. VanVleck, resides in Tulsa.

La.-Ark. Wildcats

(Continued from Page 110)

DeSoto Pet. Co.'s No. 1 B. Y. Wemple, C S½ SE NE SW Sec. 14-12-11.
Arranging to set csg. 2,590 ft.

D. J. Flesh et al's No. 1 Farmer, 660 ft. S. 610 ft. E, NW cor. SE NE Sec. 14-12-13.
Set 10-in. 152 ft.

E. L. Foster's No. 1 Youngblood, Sec. 9-11-14.
S.D. 2,691 ft.

P. G. Fraley et al's No. 1 G. R. Stell, 330 ft. S and W, NE cor. Sec. 5-12-16.
Rigging up.

Leslie Prod. Co.'s No. 1 Ramsey, 150 ft. N and W of C Sec. 36-11-11.
Set 10-in. 45 ft.

National Oils, Inc.'s No. 1 B. Y. Wemple, NW SW Sec. 14-12-11.
S.D. 120 ft.

EAST CARROLL PARISH

Century Oil & Drlg. Co.'s No. 1 Olive Dell, 660 ft. S, 300 ft. W, NE cor. Sec. 56-21-21e.
Set 10-in. 280 ft.

GRANT PARISH

C. & S. Oil Corp.'s No. 1 Swope, Sec. 17-19-1e.
Coring 1,580 ft.

MADISON COUNTY

Frazier et al's No. 1 Frazier, 330 ft. S and E, NW cor. SE SE Sec. 23-17-10e.
S.D. 3,018 ft.

MOREHOUSE PARISH

Alex Rice, tr.'s No. 1 Myers, Sec. 15-22-7.
Drlg. 30 ft.

OUACHITA PARISH

J. E. Farrell's No. 3 State of La., Sec. 21-20-4e.
Drlg. 2,127 ft.

NATCHITOCHES PARISH

Clyde Crichton's No. 1 Friedman Est., 406 ft. N, 428 ft. E, SW cor. Sec. 52-7-6.
Reaming to bottom 2,934 ft.

Missouri Drlg. Co.'s No. 1 Brown Lbr. Co., 400 ft. N, 330 ft. W, SE cor. Sec. 5-10-10.
Washing to bottom 1,033 ft.

RAPIDES PARISH

Williams-Carroll & Day's No. 1 Armstrong & Murphy, 286 ft. N, 300 ft. W, SE cor. Sec. 24-5n-1w.
Drlg. shale 2,220 ft.

RED RIVER PARISH

Sterling O. & R. Co.'s No. 1 Long Bell, Sec. 19-13-9.
S.D. 2,946 ft.

J. S. Tuffree's No. 1 Wilkinson, 1,320 ft. S and W, NE cor. Sec. 11-12-11.
S.D. 1,395 ft.

SABINE PARISH

H. J. Brothers et al's No. 1 Edwards, 300 ft. S and W, NE cor. SW NW Sec. 29-9-13.
Tested dry; S.D.; W.O. 2,015 ft.

Crescent Drlg. Co.'s No. 3 Garner, Sec. 3-7-11.
Location abd.

M. T. Hines' No. 1 J. B. Hill, SW NE Sec. 4-6-11.
S.D. 2,240 ft.

Laurel Pet. Co.'s No. 1 Long Bell Lbr. Co., 330 ft. N and E, SW cor. Sec. 14-8-14.
S.D. 1,300 ft.

Lawson-Leavell & Bryant's No. 4 Bank of P. H., 330 ft. S and W, NE cor. NW NE Sec. 29-9-13.
Testing 2,012 ft.

Jack Lent's No. 1 Williams, Sec. 13-7-11.
S.D. 950 ft.

Dave McConnell's No. 1 Whiting Corp., Sec. 3-9-13.
Comp.; pumping 12 bbls. of oil and 300 bbls. of S.W., 1,956 ft.

Strickland et al's No. 1 Whitney Corp., Sec. 32-10-12.
Recmt. 8-in.; T.D. 1,590 ft.

UNION PARISH

Carbon Consolidated's No. 1 Hollis, 946 ft. N, 1,056 ft. E, SW cor. SE Sec. 10-21-3e.
Set 8-in. 843 ft.; set 6-in. 2,115 ft.

Southern Carbon Co.'s No. 67 fee, 1,980 ft. S. 750 ft. E, NW cor. Sec. 5-20-4e.
Rigging up.

WEBSTER PARISH

Virgil Likens' No. 1 E. L. Stewart, 1,020 ft. E, 600 ft. S of NW cor. Sec. 23-18-10.
Sidetracking core head, 2,006 ft.

ARKANSAS

ASHLEY COUNTY

Glenn E. McFaddin et al's No. 1 Boreine Farms, 660 ft. S and W, NE cor. Sec. 1-18-8.
D.S. stuck 2,800 ft.

COLUMBIA COUNTY

Southern States Gas Co.'s No. 1 Piney Woods Lbr. Co., 330 ft. N and E, SW cor. NE NW Sec. 10-20-22.
S.D. 960 ft.

O. F. Whittaker's No. 1 F. Hall, 330 ft. N and W, SE cor. SE NW Sec. 11-15-20.
Set 10-in. 101 ft.; drlg. 450 ft.

HEMPSTEAD COUNTY

A. H. Bagnelle's No. 1 Trattner & Rhinehart, Sec. 2-13-26.
S.D. 1,992 ft.

F. W. Martin's No. 2 Lafferty, C NW Sec. 17-14-24.
Rigging up.

LAFAYETTE COUNTY

Kamon & Neely's No. 1 Cockran, NW cor. SE SW Sec. 26-19-25.
Drlg. 3,310 ft.

F. W. Martin's No. 2 Lafferty, 400 ft. N and W of C Sec. 17-14-24.
Rigging up.

Larry Romine's No. 1 Nolte, NE cor. NE NW Sec. 11-19-26.
Moving in rig.

Riggs Bros.' No. 1 Dubose, SE cor. SW NW Sec. 35-15-24.
Arranging to resume drlg. at 2,000 ft.; (corrected).

LONOKE COUNTY

J. G. Strahan's No. 1 Hardin, Sec. 18-2s-7w.
S.D. 1,780 ft.

MILLER COUNTY

Ed Donohue's No. 2 Beck, Sec. 33-15-26.
W.O.S.R. 2,941 ft.

Duluth-Ark. Oil Co.'s No. 4 Beck, SE cor. SE SW Sec. 34-15-26.
Comp.; pumping 25 bbls., 2,941 ft.

M. D. K. Fitzwater's No. 1 E. H. Beck, 150 ft. N and E, SW cor. NW SW Sec. 34-16-26.
Sidetracking D.S. 2,915 ft.

Fitzwater et al's No. 1 Norson, SW cor. SE SW Sec. 20-16-27.
S.D. 3,177 ft.

King Oil Corp.'s No. 1 C. H. Schroder, 200 ft. N, 330 ft. E, SW cor. SW NE Sec. 24-14-28.
S.D. 3,167 ft.

King Oil Corp.'s No. 1 Anderson, 350 ft. E, 200 ft. S, NE cor. SW NE Sec. 16-14-27.
S.D. 2,212 ft.

Magnolia Pet. Co.'s No. 3 Olivet, 336 ft. S and W, NE cor. NW NW Sec. 3-16-26.
Derrick.

A. C. Roan's No. 1 Frost Est., 150 ft. N and W, SE cor. SE SW Sec. 8-15-26.
Set 10-in. 120 ft.

Lee Timberlake's No. 1 Frost Est., 330 ft. N and E, SW cor. SW SE Sec. 27-15-26.
Coring 3,080 ft.; (corrected).

NEVADA COUNTY

Carnett et al's No. 1 Floyd Munin, C SW Sec. 16-14-22.
S.D. 50 ft.

OUACHITA COUNTY

F. A. Book et al's No. 1 Arnold, Sec. 24-15-16.
S.D. 2,032 ft.

Kraft Oil Corp.'s No. 1 Rath & Cartier, 330 ft. S and E, NW cor. SW SW Sec. 32-13-17.
S.D. 1,852 ft.

Chas. Steele et al's No. 1 Myar Est., 330 ft. N and W, SE cor. SW SE Sec. 16-13-18.
S.D. 50 ft.

SEVIER COUNTY

Pendleton & Vaughn's No. 1 Harrison Est., 265 ft. S, 30 ft. W, CEL Sec. 34-9-30.
Drlg. plug with cable tools, 1,153 ft.

UNION COUNTY

Alice-Sidney Oil Co.'s No. 2-B E. F. Gregory, 330 ft. N and E, SW cor. NW SW Sec. 10-11-14.
W.O.S.R. 3,386 ft.

J. E. Crosbie, Inc.'s No. 1 W. E. Gregory, 330 ft. S and E, NW cor. NE Sec. 15-17-14.
S.W. and abd. 3,503 ft.

J. E. Crosbie, Inc.'s No. 1 Warren, 330 ft. S and W, NE cor. SW SW Sec. 10-17-14.
S.D.; W.O. 3,342 ft.

Gardy Drlg. Co.'s No. 1 Craig, Sec. 35-17-15.
S.D.; W.O. 2,211 ft.

Gulf. Ref. Co.'s No. 49 L. Werner, 4,620 ft. N, 60 ft. E, SW cor. Sec. 5-16-16.
Drlg. 5,165 ft.

Reuter Oil Co.'s No. 2 Vines, NW cor. SW SE Sec. 29-18-14.
D.D. to 2,216 ft.; W.O.S.R.

H. L. Hunt's No. 15 E. F. Gregory, 330 ft. N and W, SE cor. Sec. 10-17-14.
S.D. in salt rock 6,911 ft.

H. L. Hunt, Inc.'s No. 16 J. D. Gregory Estate, 330 ft. S and W, NE cor. SE SW Sec. 10-17-14.
Set 10-in. 150 ft.

H. L. Hunt's No. 18 E. F. Gregory, 330 ft. N and E, SW cor. Sec. 11-17-14.
Derrick.

Mrs. R. K. Jones et al's No. 1 Davis, 330 ft. N and W, SE cor. NW NW Sec. 28-16-14.
Set 7-in. 2,746 ft.; T.D. 2,765 ft.

Lion Oil Ref. Co.'s No. 6 H. L. Rowland, 330 ft. S and W, NE cor. Sec. 15-17-14.
T.A. 3,427 ft.

Marine Oil Co.'s No. 4-E Thompson, 330 ft. S and W, NE cor. NW NE Sec. 10-18-13.
Set 7-in. 3,564 ft.; T.D. 3,583 ft.

Joe Modisette et al's No. 1 D. S. Sturdevant, 330 ft. N and W, SE cor. Sec. 6-18-13.
Drlg. 4,016 ft.

C. E. Murdock's No. 1 Pumphrey, C SW NW NE Sec. 11-17-14.
Derrick.

Reuter Oil Co., Inc.'s No. 1 J. L. Kinard, 330 ft. S and E, NW cor. SE NW Sec. 32-18-14.
Pumping 2,189 ft.; no gauge.

Earl Patterson's No. 1 C. L. Smith, 1,130 ft. S, 550 ft. E, NW cor. Sec. 29-17-14.
Drlg. 2,803 ft.

Urbana-Union Oil Co.'s No. 1 U. S. M., 330 ft. S and E, NW cor. E½ SW Sec. 34-17-13.
S.D.; repairing rig, 3,628 ft.

MISSISSIPPI

AMITE COUNTY

Mineral Resources, Inc.'s No. 1 Anderson, C NE NW Sec. 14-3n-3e.
S.D. 550 ft.

BOLIVAR COUNTY

White & Jones' No. 1 Ballou, SE SE NW Sec. 17-24n-7w.
S.D. 20 ft.

CLARKE COUNTY

L. Beckwith et al's No. 1 Long Bell Lbr. Co., 538 ft. S, 125 ft. W of C Sec. 10-2n-16e.
T.A.; lack of funds.

Clarke County Oil Co.'s No. 1 Dora Butler, C SW SW Sec. 15-2n-16e.
Set 10-in. 63 ft.

HARRISON COUNTY

Big Ridge Oil Co.'s No. 1 Hinzin, NE Sec. 13-7s-10w.
S.D.; W.O. 1,100 ft.

HINDS COUNTY

F. H. Robertson et al's No. 1 Martin, 660 ft. E, 330 ft. N, SW cor. N½ SW NE Sec. 26-6n-1e.
Rigging up.

Bob Weaver's No. 1 T. Russell & Oparka, C NW NW NE Sec. 26-6n-1e.
Comp.; 35,000,000 ft. of gas, 2,472 ft.

JONES COUNTY

Snow-Black Pet. Co.'s No. 1 Fox, 400 ft. N, 750 ft. W, SE cor. SE SW Sec. 30-7n-12w.
D.S. stuck 4,050 ft.

LAUDERDALE COUNTY

Bob Dalton's No. 1 Bounds, Sec. 34-7n-15e.
S.D.; W.O. 1,600 ft.

MONROE COUNTY

P. J. McAlpine's No. 1 Frank Rye, Sec. 15-15s-17w.
S.D. 2,910 ft.

P. J. McAlpine's No. 1 Crook, 1,090 ft. S, 90 ft. W, NE cor. Sec. 15-13s-13w.
Fishing for liner 2,279 ft.

RANKIN COUNTY

Clevebone et al's No. 1 Boehle, 150 ft. S and W, NE cor. NW NE Sec. 18-5n-2e.
Drlg. 1,850 ft.

WALTHALL COUNTY

Mutual O. & G. Co.'s No. 1 Boyd, SW cor. SW SE Sec. 24-2n-9e.
Partly rigged up and S.D.

WARREN COUNTY

H. W. Elliott et al's No. 2 R. L. Parker, 750 ft. E, 1,570 ft. S, NW cor. Sec. 14-14n-1e.
S.D.; high wtr. 1,600 ft.

WASHINGTON COUNTY

Perkins & Dees' No. 1 Lee, 1,500 ft. E, 500 ft. N, SW cor. Sec. 33-15n-3w.
Set 10-in. 300 ft. and S.D.

WINSTON COUNTY

Jack Vale et al's No. 1 Moody, 713 ft. N, 667 ft. E, SW cor. NW SW Sec. 3-13n-14e.
S.D.; W.O. 1,320 ft.

La.-Ark. Proven Fields

NORTH LOUISIANA

CADDO—RODESSA

United Gas Public Service Co.'s No. 1 I. L. Young, C E½ SE Sec. 21-23-16.
Rigging up.

United Gas Pub. Ser. Co.'s No. 1 Johnson Unit, 1,245 ft. S, 1,365 ft. W, NE cor. Sec. 26-23-16.
Set 7-in. 5,436 ft.

SABINE PARISH—ZWOLLE

Alexander & Crane's No. 1 Fogman, SE cor. N½ SW NE Sec. 18-7-11.
Set 6-in. 2,373 ft.

Ivan A. Allen's No. 1 La. Long Leaf, 330 ft. N and W, SE cor. NW SE Sec. 12-7-11.
S.D. 2,120 ft.

H. C. Maulding's No. 1 Davis, 350 ft. N and W, SE cor. NE NE Sec. 2-7-11.
Rigging up.

K. C. Peterson et al's No. 1 Bowman-Hicks, 330 ft. S and E, NW cor. SW NW Sec. 2-7-9.
Derrick down.

Tex.-La.-Ark. Oil Co.'s No. 1 Pickering Lbr. Co., Sec. 3-3-12.
S.D. 2,742 ft.

EAST TEXAS (BORDER COUNTIES)

HARRISON COUNTY

R. C. Payne et al's No. 1 Lowery, H. D. Spain Sur.
P.B. to 3,524 ft.

MARION COUNTY

Ed S. Holman's No. 1 Henderson, R. Bennington Sur.
P.B. to 2,443 ft.

PANOLA COUNTY

R. A. Graddy's No. 1 M. J. McCormick, J. McAdams Sur.
Moving in rig.

George Hudson et al's No. 1 J. F. Nail, C. McGeary Sur.
Set 8-in. 40 ft.; fishing for core bbl. at 2,345 ft.

Geo. Le Grand's No. 1 P. J. Wardleigh, A. Thompson Sur.
Set 10-in. 62 ft.

R. W. Price's No. 1 Crawford, J. A. Williams Sur.
Set 10-in. 64 ft.

Fred Stovall Drlg. Co.'s No. 1 H. D. Ivey, P. Martin H.R.S.
S.D. for csg. 1,980 ft.

SHELBY COUNTY

Cliff Stoval's No. 1 Pickering Lbr. Co., C. H. Patterson Sur.
S.D.; rig repair. 1,485 ft.

O. P. Bush, trustee's No. 1 Pickering Lbr. Co., P. W. Harvey Sur.
S.D. 730 ft.

ALABAMA

COVINGTON COUNTY

Geometer Prod. Corp.'s No. 1 Culbreath, SW cor. SW NE Sec. 8-2n-14e.
Drlg. 4,800 ft.

HOUSTON COUNTY

Rice O. & G. Co.'s No. 1 Oakley est., SE cor. NW SW Sec. 9-3n-29e.
S.D.; W.O. 2,506 ft.

LAMAR COUNTY

DeSoto O. & G. Corp.'s No. 1 Gardner, Sec. 22-15s-16w.
Arranging to deepen, 4,182 ft.

WALTON COUNTY—FLORIDA

Geometer Oil Corp.'s No. 2 Walton Land & Timber Co., Sec. 10-1s-19w.
Drlg. core tests on block; R.U. and S.D.

Gulf Coast Wildcats

(Continued from Page 98)

Sur. No. 23.
T.D. 5,645 ft.; 7-in. csg. 5,627 ft.; waiting on orders.

Texas Co.'s No. 17 Houston Oil Fields Assn., 244 ft. S, 244 ft. W from NE cor. of Lot 1, A.C.H.&B. Sur. No. 91.
Location.

Texas Co.'s No. 16 Houston Oil Fields Assn., 247 ft. S, 440 ft. E from NW cor. of Lot 19, A.C.H.&B. Sur. No. 91.
Location.

Texas Co.'s No. 2 Dawson, 247 ft. S, 241 ft. W of NE cor. of Lot 53, H.T.&B. Sur. No. 23.
Location.

Texas Co.'s No. 3 F. Lieder, 247.5 ft. S and 347.5 ft. E of NW cor. of Lot No. 3, A.C.H.&B. Sur.
T.D. 4,004 ft.; 7-in. csg. 3,978 ft.

Trumba Oil Co.'s (J. M. Campbell) No. 1 H. McCauley, 150 ft. each way out of NE cor. of W 5 acres of Lot No. 2, A.C. H.&B. Sur. No. 91.
Location.

Turnbull & Irwin's No. 1 Hart, center of Lot 10, H.T.&B. Sur. No. 24.
Drlg. gumbo 815 ft.

Whittle Oil Co.'s No. 1 Duke, 320 ft. W of E line, center N and S Lot 18, H.T.&B. Sur. No. 23.
Location.

PLEDGER—BRAZORIA COUNTY

Humble O. & R. Co.'s No. 1 T. L. Smith, 1,283 ft. NE from W cor. of 88.86-ac. lease, thence 887 ft. SE at R/A. D. McNeel Sur.
Rig up.

PORT LAVACA—CALHOUN COUNTY

Texas Co.'s No. 1 I. Blardone, 1,650 ft. from E line and 1,350 ft. from N line of lease, Samuel Shupe Sur.
Drlg. shale 3,305 ft.

Texas Co.'s No. 1 R. Duelberg, 1,565 ft. NE

along S line from SW cor. of lease and 390 ft. N at R/A. M. Sanches Sur.
Drlg. shale 4,925 ft.
Texas Co.'s No. 1 J. A. Marten, 1,700 ft. SW along N line from NE cor. and 1,400 ft. at R/A in SE direction, Florentina Garcia League Sur.
Drlg. shale 2,115 ft.
Texas Co.'s No. 1 H. C. Wehmeyer, 900 ft. NW along W line from upper SW cor of lease, and at R/A NE 1,313 ft., M. Sanches Sur.
Drlg. shale 4,963 ft.
Halliburton Oil Prod. Co.'s No. 1 Bruton 660 ft. due E of Steinberger Pet. Co.'s No. 1 Ishofner, M. Sanches Sur.
13-in. csg. 490 ft.; drlg. shale 2,389 ft.

ANAHUAC—CHAMBERS COUNTY

Humble O. & R. Co.'s No. 1 Broussard, 466 ft. from W line, 466 ft. from N line, Sec. 63, H.&T.C. Sur.
Drlg. shale 4,659 ft.
Humble O. & R. Co.'s No. 1 J. J. Clark, 466 ft. N of S line and 466 ft. W of E line of H.&T.C. Sur., Sec. 64.
Drlg. shale 6,990 ft.
Humble O. & R. Co.'s No. 2 Middleton, 466 ft. out of NE cor. of H.&T.C. Sur., Sec. 64. Derrick.

BARBERS HILL—CHAMBERS COUNTY

McAlbert Oil Co.'s No. 3-B Heggins, 50 ft. S of N line and 50 ft. E of W line.
Drlg. sand and shale 4,446 ft.
Mills Bennett Prod. Co.'s No. 2-C Barber, 93 ft. N of No. 1, 100 ft. E of W line.
Drlg. shale and lime 977 ft.
Sun Oil Co.'s No. 1 Higgins, 50 ft. S of N line, 50 ft. W of E line.
Drlg. sand and shale 1,034 ft.
Sun Oil Co.'s No. 11 Chambers County, half way between and in line with Nos. 9 and 10.
Drlg. rock 1,770 ft.
Texas Gulf Prod. Co.'s No. 3 Fitz, 450 ft. E of W line, 75 ft. N of S line.
Drlg. salt 2,446 ft.
Texas Gulf Prod. Co.'s No. 12-A Kirby, 613 ft. N of S line, 85 ft. W of E line, W of Humble O. & R. Co.'s No. 8-B Kirby.
Drlg. salt 3,696 ft.
Texas Gulf Prod. Co.'s No. 2 Morgan Fitzgerald, 400 ft. N of S line, C of Strip No. 3.
Pulling tubing to perforate csg. 4,568 ft.; I.P. 786 bbls. per day through ¾-in. choke.
Texas Gulf Prod. Co.'s No. 2 Fitz-Meadows, 281 ft. S of N line, 50 ft. W of E line of T. S. Fitz lot.
Drlg. salt 2,294 ft.
Yount Lee Oil Co.'s No. 28 Chambers County, 50 ft. N of S line, direct offset to Sun's No. 10 Chambers County, Wm. Bloodgood Sur.
Coring oil sand 3,793 ft.
Yount Lee Oil Co.'s No. 30 Chambers County School Land, 50 ft. N of S line, direct offset to Sun Oil Co.'s No. 11. Derrick.
Yount Lee Oil Co.'s No. 7 Phillips (W.O.), 100 ft. W of No. 8, Wm. Bloodgood Sur. Top oil sand 5,468 ft.; T.D. 5,590 ft.; I.P. 528 bbls. per day through ¼-in. choke.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 19 Maya, 400 ft. SE of No. 11, 400 ft. SW of No. 14, E. H. R. Wallace Sur.
Drlg. shale 1,471 ft.

BIG CREEK—FORT BEND COUNTY

Trans-State Oil Co.'s No. 2 Ahlers, 85 ft. N of Gulf Stream, Inc.'s No. 1 Ahlers, Michael Young Sur.
T.D. 2,685 ft.; 7-in. csg. 2,636 ft.; reset tubing; prepare to test.

BOLING—FORT BEND COUNTY

Irwin Larsen et al's No. 1 J. R. Farmer, 100 ft. NW and 100 ft. SW from E cor. of 125-ac. lease, James Scott Sur. Location.
Midland Oil Co.'s No. 1 P. F. Coulter, 150 ft. from S line, 4,174 ft. from W line of 100-ac. tract, Miller League No. 2.
Set screen; T.D. 4,186 ft.
Navarro Oil Co.'s No. 2 H. R. Farmer, 363 ft. from SW line and 160 ft. from SE line of Humble O. & R. Co.'s lease, James Scott Sur. Derrick.
Yew Development Co.'s No. 1 C. E. Farmer, 600 ft. S and 325 ft. W of the NE cor. of 50-ac. lease, James Scott Sur.
Rig up.

ORCHARD—FORT BEND COUNTY

Gulf Prod. Co.'s No. 42 Moore, 345 ft. S. 305 ft. W of SW cor. of E.M.G. Co. Sur.
Drlg. cap rock 2,281 ft.
Gulf Prod. Co.'s No. 43 Moore, 350 ft. E along S line of SW cor. of E.M.&G. Co. Sur. and 740 ft. N at R/A to said line of lease, 350 ft. E of No. 3 Moore.
Drlg. shale and lime 4,176 ft.

THOMPSON—FORT BEND COUNTY

Gulf Prod. Co.'s No. 2 S. B. Gehr, 340 ft. from S line, 571 ft. E from Gulf Prod. Co.'s No. 1 S. B. Gehr, S. Kennedy Sur.
Drlg. shale 5,166 ft.
Gulf Prod. Co.'s No. 3 Hammerstram, 1,386 ft. from S line, and 2,436 ft. from W line of lease, S. Kennedy Sur.
Drlg. shale 5,380 ft.
Humble O. & R. Co.'s No. 12 Booth, 281 ft. from N line of lease, 1,550 ft. W of No. 11, John Rabb Sur.
Topped oil sand 5,310 ft.; coring sand and shale 5,330 ft.

HIGH ISLAND—GALVESTON COUNTY

Yount Lee Oil Co.'s No. 46 Cade, 424 ft. SW of No. 35, 424 ft. NW of No. 36, Fitzsimmons Sur.
Rig up.
Yount Lee Oil Co.'s No. 1 Taylor, D. Dunman Sur., 125 ft. due E of No. 1-A Gordon-Viterbo.
Location.
Yount Lee Oil Co.'s No. 24 Cade.
T.D. 6,063 ft.; cutting and pulling liner.
Yount Lee Oil Co.'s No. 16 Smith.
T.D. 5,922 ft.; P.B. 5,550 ft.; set whipstock 5,543-50 ft.
Yount Lee Oil Co.'s No. 1 Acon & Hughes, 85 ft. E of No. 1 Pabst, on a 3.32-ac. tract, M. Dunman Sur.
Rig up.
Yount Lee Oil Co.'s No. 1-A Lockhart, 85 ft. W of No. 1 Pabste, on a 5.28-ac. tract, M. Dunman Sur.
Drlg. shale 3,730 ft.
Yount Lee Oil Co.'s No. 45 Cade.
T.D. 5,211 ft.; 7-in. csg. 5,186 ft.; I.P. 300 bbls. per day through 3/16-in. choke; T.D. 5,221 ft.
Yount Lee Oil Co.'s No. 1-A Gordon-Viterbo, 122 ft. E of W line, 326 Ft. S of N line of Lot 1, Martin Dunman Sur.
Top sand 4,368 ft.; 7⅝-in. csg. 4,369 ft.; T.D. 4,393 ft.
Yount Lee Oil Co.'s No. 1 Loustalbot, 300 ft. from N line, 121 ft. from E line of Lot No. 3, offset to No. 2 Stewart, Martin Dunman Sur.
T.D. 4,095 ft.; to P.B.

DICKINSON—GALVESTON COUNTY

Humble O. & R. Co.'s No. 1 Fugger, 323 ft. from W line, 522 ft. from N line of lease, J. S. Sherman Sur.
Derrick.
Humble O. & R. Co.'s No. 1 Townes, 440 ft. E of W line, 550 ft. N of N bank of Bayou, B.B.B.&C. Sur.
Location.
Humble O. & R. Co.'s No. 3-A Stewart, 338 ft. S of easterly NE cor., 2,016 ft. W of easteriy E line, 425 ft. S of S line of Bayou, John Sellers Sur.
T.D. 8,146 ft.; 7-in. csg. 8,072 ft.; cored oil sand; waiting on cement to set.
Humble O. & R. Co.'s No. 2-A Maco Stewart, 3,324 ft. S along E line of S bank of Bayou and 566 ft. W of E line at R/A John Sellers Sur.
Rig up.
Stanolind O. & G. Co.'s No. 1 State, 247 varas S of Humble O. & R. Co.'s No. 1 Jones.
Location.
Turnbull & Irwin's No. 1 J. Piazza, 460 ft. W and 250 ft. S of Humble O. & R. Co.'s No. 1 Jones, J. S. Sherman Sur.
Drlg. shale 4,835 ft.

ARRIOLA—HARDIN COUNTY

Houston Oil Co.'s No. 8 fee, Arriola Sur.
Rig up.
Houston Oil Co.'s No. 11 fee.
Drlg. shale 3,967 ft.
Houston Oil Co.'s No. 6-X fee, 400 ft. SE of No. 4-X, 500 ft. SE of No. 5-X fee.
Drlg. sandy shale 1,598 ft.
Republic Prod. Co.'s No. 11 fee, E. Arriola Sur.
Tested S.W.; T.D. 3,842 ft.; waiting orders.

BATSON—HARDIN COUNTY

Danciger Oil & Refining Co.'s No. 1 Tom Wynne, 250 ft. S, 150 ft. W of Deering's No. 1 Cruse.
Drlg. rock 730 ft.
Sterling O. & R. Co.'s No. 1 Doucette, 565 ft. N from NE cor. of Nunn tract thence 565 ft. E at R/A, Wm. Donoho Sur.
Drlg. sandy shale 5,673 ft.
John Deering's No. 1 Bullock, 1,000 ft. N. 17 ft. E of middle line of 30-ac. tract, Bullock tract, Dondo Sur.
Coring shale 5,588 ft.
John Deering's No. 2 Cruse, 200 ft. E and 50 ft. S of No. 1 Cruse, W. Donaho Sur
Rig up.
John Deering's No. 3 Hooks, 200 ft. E of Cruse and Hooks' dividing line and 50 ft. S of straight line from No. 1 Cruse and No. 2 Hooks, W. Donoho Sur.
T.D. 5,642 ft.; showing oil; to core deeper.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 11-N Jordit, 200 ft. due W of No. 11-R Jordit.
Clearing location.

SOUR LAKE—HARDIN COUNTY

Arlis Pet. Co.'s No. 1 Harkan and Langham.
Dig pits.
Texas Co.'s No. 319 fee, S 44 deg., 42 ft., W 300 ft. from No. 265 and 400 ft. from No. 318.
7-in. csg. 1,832 ft.; T.D. 2,032 ft.; rig up to pump.

HUMBLE—HARRIS COUNTY

Sun Oil Co.'s No. 84 River, 300 ft. E of No. 61, in 292-ac. tract, Robert Dunman Sur.
Location.
Sun Oil Co.'s No. 74 River, 275 ft. E of No. 73 in 292-ac. tract, Robert Dunman Sur.
T.D. 1,231 ft.; 7-in. csg. 1,215 ft.
Sun Oil Co.'s No. 29 Bender.
Coring oil sand 2,986 ft.
Texas Co.'s No. 31 Humble, 300 ft. due south of No. 28.
Drlg. 27 ft.

PIERCE JUNCTION—HARRIS COUNTY

Gulf Prod. Co.'s No. 39 Taylor, 1,729 ft. S. 75 ft. W of NE cor. of J. Hampton Sur.
Drlg. shale 5,770 ft.
Gulf Prod. Co.'s No. 21 Taylor.
Coring oil sand 3,894 ft.
Hamil & Smith's No. 1 House, J. Hamilton Sur.
Top sand 6,482 ft.; T.D. 6,486 ft.; cmtd. 4¾-in. csg. at 6,306 ft.
Rio Bravo Oil Co.'s No. 27-A Settegast, 377 ft. S, 553 ft. W of NE cor. of Settegast "A" tract, James Hamilton Sur.
Standing 5,526 ft.
Rio Bravo Oil Corp.'s No. 9-A Settegast, 1,575 ft. N line, 350 ft. E line NE cor. "A" lease, J. A. Kopman Sur.
T.D. 5,411 ft.; standing.

MYKAWA—HARRIS COUNTY

Alpha Pet. Co.'s No. 1 W. T. Carter, Lbr. & Bldg. Co., Blas Herrera Sur., 1,320 ft. from E line, 200 ft. from S line of 220-ac. tract.
Drlg. shale 3,620 ft.
H. C. Aiken's No. 1 Waggoner, F. J. Rothas Sur.
Rig up.
West Prod. Co.'s No. 1 J. E. Lobit, Blk. 9, F. J. Rothas Sur.
Drlg. shale 2,823 ft.
West Prod. Co.'s No. 1 Platt, W. B. Walker Sur., A-859.
Drlg. shale 1,310 ft.

TOMBALL—HARRIS COUNTY

Continental Oil Co.'s No. 3 Petrich, J. House Sur.
T.D. 5,575 ft.; 7-in. csg. 5,557 ft.; comp.; no gauge; tubing pressure 165 lbs.; csg. pressure 1,650 lbs.
Humble O. & R. Co.'s No. 3 Dodge, 250 ft. from most southerly S line, 317 ft. from westerly E line, J. H. Edwards.
10¾-in. csg. 925 ft.; drlg. sand 2,215 ft.
Humble O. & R. Co.'s No. 2 Holderrith, 600 ft. from S line, 466 ft. from W line of tract.
10¾-in. csg. 933 ft.; drlg. shale 941 ft.
Humble O. & R. Co.'s No. 1 Hillegeist, 1,118 ft. from S line, 389 ft. from W line of 44.35-ac. tract, J. House Sur.
Location.
Humble O. & R. Co.'s No. 1 Schultz, 550 ft. from S line, 356 ft. from W line of 42.05-ac. tract, J. House Sur.
T.D. 5,568 ft.; 7-in. csg. 5,562 ft.
Humble O. & R. Co.'s No. 1 Michel, 510 ft. from N line, 466 ft. from W line of lease, Wm. Hurd Sur.
T.D. 5,578 ft.; 7-in. csg. 5,578 ft.
Humble O. & R. Co.'s No. 1 C. H. Mueller, 549 ft. from S line of lease, 560 ft. W of SE cor. of M. J. Kuehn tract, T. A. Duclose Sur.
T.D. 5,553 ft.; I.P. 25 bbls. per hr. through ¼-in. choke; tubing pressure 950 lbs.
Humble O. & R. Co.'s No. 8 Reid, 1,770 ft. from W line of lease, G. Goodrich Sur.
T.D. 5,549 ft.; I.P. 23 bbls. per hr. through ¼-in. choke.
Texas Co.'s No. 3 Ziegler, 1,449 ft. E of W line and 446 ft. S of N line of lease, 930 ft. E of No. 1.
Prepare to ream at 5,126 ft.

VANDERBILT—JACKSON COUNTY

Imperator Oil Co.'s No. 1 Dutton, S C of Lot No. 11, Blk. 25, 450 ft. S of R.R. and 1,350 ft. W line of townsite, Ray Musquiz Sur.
Rigged up and S.D.
Turman Oil Co.'s No. 1 T. H. Miller, 150 ft. each way out of E 50 ac. of Miller 100-ac. tract in Ray Musquiz Sur.
Rigging up.

BIG HILL—JEFFERSON COUNTY

Yount Lee Oil Co.'s No. 1-B Pipkin & Davis, 2,225 ft. from E line and 2,385 ft. from N line of survey, Wm. McFadden Sur.
Rig up.

FANNETT—JEFFERSON COUNTY

Gulf Prod. Co.'s No. 8 Burrell, 750 ft. N from SW cor. of C. W. Burrell's 232-ac. tract and 100 ft. E at R/A.
Drlg. sand 4,308 ft.

CLEVELAND—LIBERTY COUNTY

Black Gold Pet. Oil Corp.'s No. 2 R. D. McDonald, 466 ft. W of most westerly E line and 466 ft. N of most northerly S line of survey, 933 ft. W of Gulf Prod. Co.'s No. 7-C Kirby Lbr. Co., T. Devers Sur.
Derrick.
Gulf Prod. Co.'s No. 9-C Kirby Lbr. Co., 1,967 ft. N, 1,400 ft. E from the NE cor. of J. S. Eldridge Sur. in the John Pleasant Sur.
Rig up.
William J. Colegrove et al's No. 1 State School Land & Dev. Co., 446 ft. from W line and 170 ft. from S line of survey, Clayton Harper Sur.
Location.

ESPERSON—LIBERTY COUNTY

General Crude Oil Co.'s No. 21 Esperson.
Drlg. shale 5,739 ft.
General Crude Oil Co.'s No. 1 W. D. Kay, Malcolm Duncan Sur., 1,537 ft. along N T.D. 6,655 ft.; P.B. to 5,900 ft.; drlg. shale 6,502 ft.
General Crude Oil Co.'s No. 10 Davis, 2,000 ft. from E line, 660 ft. from S line of D. Kokernut Sur.
T.D. 5,831 ft.; to deepen.

HANKAMER—LIBERTY COUNTY

Cretaceous Oil Co.'s No. 3 Ezzell, 450 ft. W of E line of tract, Levi Barrow Sur.
Moving in derrick.
Cretaceous Oil Co.'s No. 2 S. E. Ezzell, 150 ft. S of N line, 100 ft. W of E line of Ezzell's 75-ac. tract, Levi Barrow Sur.
T.D. 2,582 ft.; 7-in. csg. 2,561 ft.; I.P. 300 bbls. per day; ½-in. choke.
Eljean Oil Co.'s No. 1 Ezzell, 1,325 ft. from N. 150 ft. from E line of Ezzell 175-ac. tract.
Drlg. shale 2,388 ft.
Gulf Prod. Co.'s No. 1-B W. L. Bingle, 159 ft. E along S line of H.&T.C. Sur., thence 378 ft.
Moving in rig.
Gulf Prod. Co.'s No. 18 Boyt, E offset to Wilson Broark Oil Co.'s No. 1 Barrow, in Levi Barrow Sur.
Rig up.
Gulf Prod. Co.'s No. 1 Hankamer, 259 ft. W. 420 ft. N of SE cor. of George Stingler Sur.
T.D. 3,327 ft.; I.P. 19 bbls. per hr.; working pressure 1,225 lbs.
Jones Drlg. Co.'s No. 1 Ezzell, 1,050 ft. S of N line, 150 ft. W of E line of Levi Barrow Sur.
Drlg. shale 1,120 ft.
Will Strozier et al's No. 1 Ezzell, 700 ft. N of S line, 150 ft. W of E line of Levi Barrow Sur.
Derrick.

HULL—LIBERTY COUNTY

Republic Prod. Co.'s No. 155 Dolbear, Jesse Devore Sur.
Drlg. shale 2,432 ft.
Gulf Prod. Co.'s No. 107 Phoenix, 400 ft. W of No. 106, and 400 ft. N of No. 103, J. Devore Sur.
T.D. 3,575 ft.; I.P. 600 bbls. per day through ¼-in. choke; tubing pressure 400 lbs.
Texas Co.'s No. 6 Barrow, 383 ft. S and 150 ft. W from NE cor. of tract, J. Devore Sur.
T.D. 4,883 ft.; I.P. 35 bbls.

MARKHAM—MATAGORDA COUNTY

Superior O. & G. Co.'s No. 1 Hawk, W. H. Gainor Sur., west flank of dome.
T.D. 4,213 ft.; 7-in. csg. 4,185 ft.; cored oil sand 4,200-10 ft.; flowed salt wtr. cut with oil and gas; waiting on orders.

MOSS BLUFF—LIBERTY COUNTY

Gulf Coast Sulphur Co.'s No. 1 McManus, 588 ft. from E, 1,650 ft. from N line of W. A. tract, B. M. Spinks Sur.
Location.

CONROE—MONTGOMERY COUNTY

Humble O. & R. Co.'s No. 1 Bailey, 1,100 ft. SW from NE cor. of Alex McCowan Sur. and 466 ft. from S line R. Kuykendahl Sur.
T.D. 5,120 ft.; recovered 870 ft. of oil on D.S. test; 7-in. csg. 5,070 ft.
Sun Oil Co.'s No. 32 Foster.
9⅝-in. csg. 1,365 ft.
Sun Oil Co.'s No. 3 McDonald.
T.D. 5,090 ft.

SPLENDORA—MONTGOMERY COUNTY

Bryce McCandless et al's No. 1 Texas Long Leaf Lbr. Co., 330 ft. from N and E lines of the W½ of Blk. No. 8, Walker County School Land Sur.
Derrick.

ORANGE—ORANGE COUNTY

Trio Oil Co.'s No. 1 D. S. Comier, 69 ft. W of E line and 39 ft. S of N line of 6.83-ac. tract in W. M. Dyson Sur.
Drlg. shale 3,870 ft.

PORT NECHES—ORANGE COUNTY

Texas Co.'s No. 3 Orange National Bank, 750 ft. S of N line and 295 ft. E of W line of lease, Jacob Beaumont Sur.
T.D. 4,812 ft.; 7-in. csg. 4,760 ft.; fishing.
Texas Co.'s No. 4-B Polk, 750 ft. S and 1,450 ft. W from NE cor. of lease, Jacob Beaumont Sur.
Location.
Texas Co.'s No. 5-B Polk, 750 ft. S and 850 ft. W from NE cor. of lease, Jacob Beaumont Sur.
Rig up.
Texas Co.'s No. 6-B Polk, 750 ft. S and 250 ft. W from NE cor. of lease, Jacob Beaumont Sur.
Location.

LIVINGSTON—POLK COUNTY

Gem Oil Co.'s No. 3 Watt, 300 ft. S line, 330 ft. W line of lease, A. Viesca Sur.
Location.
Gem Oil Co.'s No. 3 Pratt, A. Viesca Sur.
Location.
Gem Oil Co.'s No. 6 Davis & Holmes, 652 ft. from W and 662 ft. from N line of survey, A. Viesca Sur.
Rig up.
Gem Oil Co.'s No. 7 Davis & Holmes, 1,050 ft. from E line, 800 ft. from N line of lease, A. Viesca Sur.
T.D. 4,330 ft.; 7-in. csg. 4,314 ft.
Johnson & Johnson's No. 1 I. B. Munson, 330 ft. from S and E lines of 26.12-ac. tract, A. Viesca Sur.
T.D. 4,340 ft.; 5 3/16-in. csg. 4,286 ft.
Sun Oil Co.'s No. 3 Pratt, 330 ft. W and 288 ft. S from SE cor. of T. A. Carlton Oil Co.'s 30-ac. lease, A. Viesca Sur.
Location.
Werby and Refugio Oil Corp.'s No. 5 Dick & Failing, 330 ft. E of W line of tract, 550 ft. N of No. 1, A. Viesca Sur.
T.D. 4,286 ft.; 7-in. csg. 4,266 ft.; P.B. to 4,279 ft.

SAN FELIPE—WALLER COUNTY

Buck Oil Co.'s No. 1 Vaughn, 660 ft. due E of Seaporton Co.'s No. 1 Vaughn, J. McFarland Sur.
Coring sand 2,695 ft.

GRETA—REFUGIO COUNTY

Hewitt & Daugherty, 466 ft. from N line, 506 ft. from E line of Hardwick Sur.
T.D. 4,395 ft.; I.P. 300 bbls. per day.
Hewitt & Daugherty's No. 12 Lambert.
Rig up.
Humble O. & R. Co.'s No. 19 Heard, 466 ft. from N line, 466 ft. from W line of John Peoples Sur.
7-in. csg. at 4,377 ft.; R.U. to pump.
Humble O. & R. Co.'s No. 1 Marberry, 4,558 ft. from S line, 466 ft. from W line of John Denn Sur.
Coring sand 3,152 ft.
Standard Oil Co. of Kansas.
7-in. csg. 4,351 ft.; T.D. 4,371 ft.; I.P. 75 bbls. per hr.

REFUGIO—REFUGIO COUNTY

Houston Oil Co.'s No. 24 P. H. Rooke, 660 ft. W of No. 21, 660 ft. S of No. 25, T. Mullen Sur.
Jetting; T.D. 3,685 ft.
Houston Oil Co.'s No. 24 Rooke, 660 ft. NW of No. 21, McMullen Sur.
Derrick.
Houston Oil Co.'s No. 25 Rooke, 660 ft. W of No. 23, McMullen Sur.
Derrick.
Houston Oil Co.'s No. 22 P. H. Rooke, 660 ft. from No. 19, 690 ft. from No. 20.
T.D. 4,910 ft.; drlg. plug.
Houston Oil Co.'s No. 23 Rooke, 660 ft. W of No. 19.
Waiting on cmt. to set; T.D. 4,905 ft.
United Gas Co.'s No. 19 Lambert.
T.D. 3,505 ft.; made salt wtr.; to deepen.
United Gas Co.'s No. 17 Lambert.
T.D. 4,381 ft.; I.P. 350 bbls. per day.

COLETO CREEK—VICTORIA COUNTY

American Liberty Oil Co.'s No. 4 Prybil, 660 ft. SW of No. 3, 330 ft. from SE line, 1,380 ft. from SW line of 121-ac. tract, Manchola Sur.
Tested 21 thribbles of oil on drill stem test; T.D. 2,866 ft.
A. Plummer's No. 3 Zimmer, 330 ft. each way out of N cor. of lease, being out of N cor. of 117-ac. tract, Manchola Sur.
T.D. 2,866 ft.; 7-in. csg. 2,839 ft.

McFADDIN-O'CONNOR DISTRICTS—VICTORIA AND REFUGIO COUNTIES

Texas Co.'s No. 9 McFaddin, 1,850 ft. N. 2 deg., 45 ft. S from No. 2.
1⅝-in. csg. 824 ft.; drlg. shale 3,643 ft.
Houston Oil Co.'s No. 1 Fagan, 330 ft. from Guadalupe River on the Fagan Island, F.

and J. M. Rodrigues Sur., SW of McFaddin Field.
Rig up.

LOUISE—WHARTON COUNTY

Pure Oil Co.'s No. 1 John Macha, 318 ft. from NW line and from SE line of F. Walnut Sur., and 467 ft. from NE line of 101.53-ac. lease, M.&C. Sur. No. 25.
Derrick.
Pure Oil Co.'s No. 1 G. Wharton Est., 1,497 ft. from SW line and 318 ft. from SE line of F. Walnut Sur., Abst. A-35.
7-in. csg. 5,129 ft.; T.D. 5,152 ft.; I.P. 310 bbls. in 22 hrs. through ¼-in. choke.
Pure Oil Co.'s No. 3 Stewart, 1,000 ft. SW and 318.25 ft. SE from N cor. of W. L. Stewart's 160-ac. tract, Morris and Cummings Sur. No. 25.
Rig up.

BAY JUNOP—TERRABONNE PARISH

Texas Co.'s No. 6-B State, 458 ft. S, 498 ft. E of NW cor. of Sec. 34-21s-14e.
P.B. and sidetracked at 6,081 ft.; drlg. shale 6,730 ft.

CALLIOU ISLAND—TERRABONNE PARISH

Texas Co.'s No. 17 Calliou Island, Sec. 20-23-23.
T.D. 4,033 ft.; I.P. 2,085 bbls. per day through ¼-in. choke.
Texas Co.'s No. 18 Calliou Island, 2,177 ft. E and 1,385 ft. S of NW cor. Sec. 24-21s-16e
Derrick.

SOUTH LOUISIANA FIELDS

BLACK BAYOU—CAMERON PARISH

Shell Pet. Corp.'s No. 22 Watkins, 2,230 ft. W and 1,340 ft. S of NE cor. Sec. 18-12s-12w.
Bldg. derrick.
Shell Pet. Corp.'s No. 21 Watkins, 1,570 ft. E of NW cor. Sec. 17-12s-13w.
Coring anhydrite 2,175 ft.
Shell Pet. Corp.'s No. 3 State.
Pulling csg.; T.D. 6,159 ft.

BOSCO—ACADIA AND ST. LANDRY PARISHES

Oswego Oil Co.'s No. 2 Moulton, Sec. 34-8s-3e.
13¾-in. csg. at 1,335 ft.; drlg. sand and coring sandy shale 8,592 ft.
Superior Oil Prod. Co.'s No. 8 Larcade, 1,-773 ft. S, 3,062 ft. E of NW cor. Sec. 35-8s-3e.
Rig up.
Superior Oil Prod. Co.'s No. 9 Larcade, 2,-755.83 ft. N, 1,936.23 ft. W of SE cor. of Sec. 34-8s-3e.
13⅜-in. csg. 1,257; drlg. shale 6,245 ft.
Superior Oil Prod. Co.'s No. 1 S. Martinez, 3,673.1 ft. S, 2,033 ft. E of NW cor. Sec. 35.
Drlg. shale and sand 4,513 ft.
Superior Oil Prod. Co.'s No. 2 Le Blanc, 1,698 ft. S, 937.09 ft. W of NE cor. Sec. 33-8s-3e.
Rig up.
Superior Oil Prod. Co.'s No. 2 E. Mire, 1,-039.07 ft. S, 916.82 ft. W of NE cor. Sec. 33-8s-3e.
Location.
Superior Oil Prod. Co.'s No. 2 Prejean, 300 ft. S, 490 ft. W of NE cor. of SW¼ Sec. 34-8s-3e.
Drlg. shale 8,385 ft.
Superior Oil Prod. Co.'s No. 1 Iseringhauser, 1,395 ft. E, 330 ft. N of SW cor. of N½ of NW¼ of Sec. 35-8s-3e.
T.D. 8,687 ft.; 7-in. csg. 8,661 ft.; I.P. 274 bbls. in 20 hrs.; tubing pressure 500 lbs.; csg. pressure 850 lbs.
Superior Oil Prod. Co.'s No. 2 C. B. Hernandez, 300 ft. N 300 ft. W of SE cor. of NW¼ Sec. 34-8s-3e.
Coring sand 8,303 ft.
Superior Oil Prod. Co.'s No. 3 C. B. Hernandez, 250 ft. N. 1,016 ft. W of SE cor. of SW¼ Sec. 34-8s-3e.
Drlg. sand and shale 8,506 ft.
Superior Oil Prod. Co.'s No. 7 Hernandez, 1,291.1 ft. N 667.5 ft. E of SW cor. of NW¼ Sec. 34-8s-3e.
Drlg. shale and lime 8,026 ft.
Superior Oil Prod. Co.'s No. "G" Hernandez, 3,358 ft. S, 683 ft. E of NW cor. Sec. 35-8s-3e.
Drlg. sandy shale 7,362 ft.
Superior Oil Prod. Co.'s No. 3 Malancon, 400 ft. S, 380 ft. E of NW cor. of SW¼ Sec. 34-8s-3e.
Drlg. shale and shells 7,518 ft.
Superior Oil Prod. Co.'s No. 2 Falls, 330 ft. N, 1,796 ft. W of SE cor. of Sec. 27-8s-3e, 13⅜-in. csg. at 1,235 ft.; T.D. 7,844 ft., P.B. to 6,320 ft.; sidetracking 6,336 ft.

DARROW—ASCENSION PARISH

Athens Oil Co.'s No. 1 United Land, 1,600 ft. S, 1,530 ft. W of NE cor. Sec. 15-10s-4e.
Rig up.
Humble O. & R. Co.'s No. 5 Community, 228 ft. SW of NE line of section, 200 ft. at R/A to east bank of river, Sec. 33-10s-2e.
Drlg. shale 4,747 ft.
Humble O. & R. Co.'s No. 4 Community, 4,825 ft. from NE cor. and 283 ft. S of N line at R/A, Sec. 33-10s-2w.
Digging cellar.

CAMERON MEADOWS—CAMERON PAR.

Burton-Sutton Oil Co.'s No. 5 School Land 150 ft. N of S line and 300 ft. E of No. 2. Sec. 16-14s-13w.
Drlg. shale 3,720 ft.
Burton-Sutton Oil Co.'s No. 4 School Land, 2,891 ft. W and 150 ft. N of SE cor. of Sec. 16-4s-13w.
Derrick.
Magnolia Pet. Co.'s No. 11 Cameron Meadows.
Drlg. sand 3,362 ft.
Texas Oil Co.'s No. 11 Calcasieu Lake.
Drlg. lime 2,040 ft.

CHOCTAW DOME—IBERVILLE PARISH

Standard Oil Co.'s No. 1 Myrtle, 900 ft. N and 550 ft. W of SE cor. of SW¼ of Sec. 52-9s-11e.
Rig up.
Standard Oil Co.'s No. 5 Gay, 2,450 ft. S and 425 ft. E of NW cor. of NE Sec. 52-9s-11e.
Drlg. shale 4,130 ft.

DOG LAKE—TERREBONNE PARISH

Texas Co.'s No. 17 State.
Drlg. shale 3,880 ft.
Texas Co.'s No. 18 Louisiana Land & Exploration.
T.D. 5,569 ft.
Texas Co.'s No. 11 State, 150 ft. N and 2,474 ft. W SE cor. Sec. 31-21s-16e.
S.D. 2,914 ft.

GARDEN ISLAND BAY—TERREBONNE PARISH

Texas Co.'s No. 13 State, 3,391 ft. S and 1,-604 ft. W of NE cor. Sec. 107-23-32.
Rig up.
Texas Co.'s No. 15 Garden Island.
S.D. 3,786 ft.

GUEYDAN—VERMILLION PARISH

Pure Oil Co.'s No. 6, Alliance Trust. 667 ft. E, 1,787 ft. S line of lease, Sec. 34-11s-1w.
Sidetracking at 3,635 ft.

HACKBERRY—CAMERON PARISH

Gulf Prod. Co.'s No. 17 Erwin.
T.D. 7,345 ft.; I.P. 639 bbls. in 24 hrs. through ⅜-in. choke; tubing pressure 475 lbs.; csg. pressure 950 lbs.
Sutton Oil Co.'s No. 2 Portier, 717 ft. S and 50 ft. W of NW cor. SW¼ SE¼ Sec. 22-12s-10w.
Rig up.
Texas Co.'s No. 14 State, 500 ft. SE of No. 13, Sec. 13-12s-10w.
Rig up.
Union Sulphur Co.'s No. 3 Humble (W.O.).
P.B. 4,700 ft.
Yount Lee Oil Co.'s No. 13 Gulf Land, Sec. 14-12s-10w.
Drlg. sandy shale 4,409 ft.
Yount Lee Oil Co.'s No. 1-A Gulf Land, 2,000 ft. S and 50 ft. E of the NW cor. of Sec. 22-12-10.
Rig up.

NEW IBERIA—IBERIA PARISH

Harrison & Abercrombie's No. 3 Schwing, 500 ft. N and 50 ft. E of No. 2, Sec. 24-12s-5w.
Drlg. shale 5,012 ft.
Iberia Oil Corp. and Y. D. Spell's No. 2 Bernard, 150 ft. E of No. 1, Sec. 54-12s-7e.
S.D. 3,846 ft.; salt.
Iberia Oil Co. and Y. D. Spell's No. 3. T.D. 4,737 ft.; (corrected); waiting on cement to set.

IOWA—CALCASIEU AND JEFF DAVIS

Shell Pet. Corp.'s No. 2 Adrain.
Redrlg. hole 7,028 ft.
Shell Pet. Corp.'s No. 14 Heyd, 330 ft. N, 1,819 ft. W of SE cor. of NE¼ Sec. 13.
7-in. csg. 6,623 ft.; I.P. 352 bbls. per day through 23/64-in. choke; tubing pressure 575 lbs.; csg. pressure 400 lbs.; T.D. 6,-678 ft.
Shell Pet. Corp.'s No. 15 Heyd, Sec. 13-9s-7w.
T.D. 4,457 ft.; running tubing to test.
Shell Pet. Corp.'s No. 4 Adrain, 1,650 ft. S, 330 ft. E of NW cor. of lease.
Drlg. shale and shells 4,298 ft.

JENNINGS—ACADIA PARISH

Absure-Bolyard Oil Co.'s No. 2 Clement.
Coring sand 1,940 ft.
Port City Oil Co.'s No. 3 Syndicate.
T.D. 6,311 ft.
Yount Lee Oil Co.'s No. 7 Houssiere-Latriele.
T.D. 7,447 ft.

LAKE BARRE—TERREBONNE PARISH

Texas Co.'s No. 32 Lake Barre.
Drlg. shale 2,934 ft.
Texas Co.'s No. 19 Lake Barre.
T.D. 345 ft.
Texas Co.'s No. 25 Lake Barre.
S.D. 1,820 ft.
Texas Co.'s No. 14 Lake Barre.
Drlg. anhydrite 2,787 ft.
Texas Co.'s No. 15 Lake Barre.
Waiting on cmt. to set, 3,786 ft.

LAKE PELTO—TERREBONNE PARISH

Texas Co.'s No. 12 Lake Pelto.
Drlg. wtr. sand 5,970 ft.
Whitestone O. & G. Co.'s No. 1 Buckley, 300 ft. S and E of NW cor. SW SW Sec. 35-19s-16e.
T.D. 3,390 ft.; P.B. to 3,053 ft.; S.D.

LAKE HERMITAGE—PLAQUEMINES PARISH

Humble O. & R. Co.'s No. 3 Lafourche Levee Basin 1,725.
T.D. 3,194 ft.; recovered 750 ft. of oil on D.S. test.

LAKE WASHINGTON—PLAQUEMINES PARISH

Humble O. & R. Co.'s No. 23 Cockrell-Moran, 650 ft. N and 21 deg. 30 min. E of No. 2 in Twp. 20s-26e.
Top salt 4,194 ft.; abd. 4,252 ft.

LEESVILLE—LAFOURCHE PARISH

Gulf Prod. Co.'s No. 4 Bernard.
Drlg. sand and shale 3,729 ft.
Gulf Prod. Co.'s No. 6 Allen Lane, Sec. 26-21s-22e.
Derrick.
Gulf Prod. Co.'s No. 12 Bernard, Sec. 26-21s-22e.
Location.
Gulf Prod. Co.'s No. 10 Bernard, 1,833 ft. E. 958 ft. S of NW cor. Sec. 26-21s-22e.
Derrick.
Emerald Pet. Co.'s No. 10, State, west bank, 300 ft. S of well No. 1.
Location.
Emerald Pet. Co.'s No. 11 State, east bank, 227 ft. N of well No. 1.
Location.
Emerald Pet. Co.'s No. 12 State, east bank, 250 ft. S of well No. 1.
Location.
Lincoln Oil Co.'s No. 6 State.
S.D. 3,226 ft.
Lincoln Oil Co.'s No. 5 State.
Location.
Texas Co.'s No. 31 Leesville.
Drlg. 3,821 ft.
Texas Co.'s No. 27 Leesville.
Drlg. wtr. sand 3,545 ft.

LOCKPORT—CALCASIEU PARISH

Union Sulphur Co.'s No. 6 Moss, located between No. 2 and No. 5 (W.O.).
S.D. 6,644 ft.

STARKS—CALCASIEU PARISH

Gulf Prod. Co.'s No. 37 Lutcher-Moore, 250 ft. E and 775 ft. N of SW cor. of Sec. 19-19s-12w.
Drlg. shale 3,406 ft.

PORT BARRE—ST. LANDRY PARISH

Gulf Prod. Co.'s No. 12 Wilson Cochran, Sec. 4-5s-6s.
Drlg. sand 921 ft.
Port Barre Oil Co.'s No. 2 Sybil, 3,080 ft. N easterly along section line, thence 55 ft. at R/A to the east, Sec. 20-6s-5e.
Drlg. shale 3,768 ft.

ROANOKE—JEFERSON DAVIS PARISH

Humble O. & R. Co.'s No. 2 C. N. Taylor, 1,320 ft. E, 440 ft. S of NW cor. of SW¼ Sec. 12-9s-4w.
Rig up.
Humble O. & R. Co.'s No. 1 Nelson Thomas, 880 ft. W of No. 2 Kratzer, 440 ft. N and W of SE cor. of 200-ac. tract.
16-in. csg. 186 ft.; drlg. shale 2,344 ft.
Humble O. & R. Co.'s No. 2-B Devilbiss, 1,127 ft. W of No. 1-B, 440 ft. S of N line of S½ of Sec. 11-9s-4w.
Coring sand and shale 7,830 ft.
Humble O. & R. Co.'s No. 1 Clayton, 3,080 ft. S and 440 ft. W, NE cor. Sec. 10-9s-4w.
Rig up.
Shell Pet. Corp's No. 1 Jarnigan, 330 ft. E, 660 ft. S, NW cor. Sec. 12-9s-4w.
T.D. 8,084 ft.
Shell Pet. Corp.'s No. 3 Kratzer, 1,330 ft. E and 440 ft. N of SW cor. of lease.
T.D. 7,597 ft.; 8⅝-in. csg. 7,584 ft.
Shell Pet. Corp.'s No. 1-B Kratzer, 660 ft. N, 330 ft. E of SW cor. of SW¼ Sec. 1-9s-4w.
Drlg. shale and sand 954 ft.

SWEET LAKE—CAMERON PARISH

Pure Oil Co.'s No. 12 Yount Lee Oil Co., 800 ft. S of No. 11, in line with Nos. 9 and 11, Sec. 12-13s-8w.
8⅝-in. csg. 2,140 ft.; T.D. 8,196 ft.; running 7-in. O.D. screen and csg.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 810 fee, 1,955 ft. S, 440 ft. E of NW cor. Sec. 29-9s-10w.
Drlg. sand 1,480 ft.
Union Sulphur Co.'s No. 1 Noble (W.O.).
Coring oil sand 5,163 ft.
Union Sulphur Co.'s No. 3 Kelly.
Drlg. sand and shale 4,904 ft.
Union Sulphur Co.'s No. 809 fee.
Drlg. shale 2,970 ft.

WHITE CASTLE—IBERVILLE PARISH

Shell Pet. Corp.'s No. 1 Wilbert.
Rig up.
Shell Pet. Corp.'s No. 1 White Castle Shingle Co., 1,830 ft. W, 100 ft. S from NE cor. of lease.
Drlg. sandy shale 2,591 ft.
Shell Pet. Corp.'s No. 1 Adams, 2,340 ft. N. 100 ft. E of SW cor. of lease.
Coring sandy shale 7,118 ft.

MISCELLANEOUS WILDCATS

TEXAS

AUSTIN COUNTY

Arkansas Fuel Oil Co.'s No. 1 Herman W. Peschel, 990 ft. out of N cor. of 167.5-ac. tract, R. Stolze Sur.
Drlg. shale 3,960 ft.
Deering & Kayser's No. 1 P. A. McClinton, 1,100 ft. from NW line and C NE and SW of 115-ac. tract in Thomas Bell Sur.
Drlg. shale 445 ft.
Paul English et al's No. 1 Felix Guhn, 1,000 ft. S, 360 ft. E from NW cor. of 71-ac. tract, D. Chomel Sur., 1 mile SE of Kinney.
Rig up.

BRAZORIA COUNTY

George Strake's No. 2 Truska, 991 ft. W of No. 1, H.T.&B. Sur., Sec. 7.
S.D. 6,000 ft.
Holt et al's No. 1 Griffith, J. B. Bailey Sur. Abd. 6,005 ft.
Showers & Moncrief's No. 1 Hughey, 5,500 ft. NW of discovery well, in center of Lot 18, H.T.&B. Sur., Sec. 29, Abst. 292.
Location.
Texas Co.'s No. 1 Freeport Sulphur Co., 2,-764 ft. N, 1 deg., 40 ft. W and 1,134 ft. S, 88 deg., 20 ft. W of NW cor. of S. F. Austin Sur., Abst. No. 35, being in the Conception Areola Sur.
Drlg. shale 3,768 ft.
Turnbull & Irwin et al's No. 1 W. and R. H. Allison, 2,200 ft. W, 2,732.5 ft. S from
Drlg. shale 2,110 ft.

CALHOUN COUNTY

Continental Oil Co.'s No. 2 American National Realty Co., 660 ft. from NW line, 660 ft. from NE line of Sec. 6, Blk. C, Pedro Garcia Sur.
Fishing 3,701 ft.

CHAMBERS COUNTY

South Gulf Oil Co.'s No. 1 J. T. White, Luke Brian Sur., 460 ft. from N line, 460 ft. from W line of 47.9-ac. tract.
Rig up.

COLORADO COUNTY

Gulf Prod. Co.'s No. 1 A. R. Milentz, 990 ft. N along E line from SE cor. of 160-ac. lease and 330 ft. W at R/A, I.&G.N.R.R. Co. Sur. No. 23.
Rig up.

FAYETTE COUNTY

Lewis Franklin's No. 1 V. Dybala, center of 75-ac. lease, A. Thompson Sur.
Location.

FORT BEND COUNTY

W. A. Shafer et al's No. 1 V. B. Bortash, 693 ft. SW of NE line and 1,003 ft. NW of SE line of Sec. 52, H.&T.C. Sur.
S.D. 2,900 ft.
George White et al's No. 1 M. M. Craving, 1,000 ft. from N, 300 ft. W of SW cor. of survey, B.B.B.&C. Sur. No. 8.
Rig up.

GALVESTON COUNTY

Gillock Pet. Co.'s No. 2 Maco Stewart, 900 ft. N and 150 ft. W of No. 1, Alex Farmer Sur.
T.D. 1,500 ft.; waiting on surface pipe; S.D.

GRIMES COUNTY

Anderson & Kerr Drlg. Co.'s No. 1 R. Lueders, 500 ft. S of N line, 1,200 ft. E of W line of 320-ac. tract and survey, Blake Brantley Sur., 2½ miles SW of Plantersville.
Drlg. shale 3,930 ft.
Hubert Holt et al's No. 1 Simon Fuqua, 1,200 ft. N of S line and 400 ft. W of E line of 177-ac. lease and survey, Moses Evans Sur.
S.D. 3,080 ft.
Dr. Marshall et al's No. 1-B Todd, 300 ft. from E line and 175 ft. from N line of 150-ac. tract in extreme NW cor. of county (25 ft. N of No. 1).
S.D. 2,005 ft.
Patton et al's No. 1 Yeager, 1,000 ft. W of E line, 170 ft. S of N line of 53-ac. tract and survey, A. Ruseolle Sur., NW of Iola Sur.
S.D. 1,000 ft.
Roan et al's No. 1 S. W. Sealy, 3,474 ft. N of S line and 850 ft. E of W line of survey, B. F. Smith Sur., 2 miles SW of Kellum Springs.
S.D. 2,970 ft.

HARDIN COUNTY

Frazier & Greer's No. 1 Sternberger Lbr. Co., 1,325 ft. S and 400 ft. W of the NE cor. of a 115-ac. tract, J. Pearson Sur.
Drlg. 90 ft.

HARRIS COUNTY

T. S. F. Oil Co.'s No. 1 J. B. Hine, Arthur McCormick Sur., Abst. 46.
T.D. 3,524 ft.; derrick blew down; will rebuild and core deeper.
C. C. Foster et al's No. 1 H. K. Johnson, 2,000 ft. from S line and C of E and W lines of G.C.&S.F. Sur.
Drilled 25 ft. and S.D.
Johnston & Johnston's No. 1 Fee land, 330 ft. S, 300 ft. E of NW cor. of 20-ac. tract Sur., Sec. No. 5.
Drlg. shale 4,753 ft.
West Prod. Co.'s No. 1 Woodburn, 1,320 ft. E of W line, 2,145 ft. N of S line of survey, A. Whitlock Sur.
Drlg. shale 1,310 ft.

JACKSON COUNTY

A. M. Harris' No. 1 Whitley, 300 ft. out of SE cor. of F. G. Keller Sur.
Location.
Shell Pet. Corp.'s No. 1 W. W. McCrary, 460 ft. out of SE cor. of 50-ac. tract, A. Kountze Sur.
Coring sand 5,772 ft.

JASPER COUNTY

Republic Prod. Co. and Houston Oil Co.'s No. 1 Sabine Tram. Co., 320 ft. out of NW cor. Sec. 71, H.&T.C. Sur.
T.D. 7,258 ft.; fishing.

JEFFERSON COUNTY

Sun Oil Co.'s No. 1 Hebert & Braussard, 6,-890 ft. NW along SW line and 660 ft. NE at right angles to SW line, B. Blackman Sur., Abst. No. 2.
Rig up.

LAVACA COUNTY

L. A. Douglas' No. 1 Fehrenkamp, 600 ft. from W line, 720 ft. from N line of Mitchell Sur.
Drlg. shale 1,620 ft.

LIBERTY COUNTY

R. M. Bruner et al's No. 1 N. Bell, 150 ft. from N line and 150 ft. from W line of Bell's 187-ac. tract, H.&T.B. Sur. No. 4.
Rigging up.
Extension Oil Co.'s No. 1 J. A. Lovett, 380 ft. from E and 600 ft. from S line of lease.
P. P. Deevers Sur.
S.D. 4,048 ft.
J. W. Frazier et al's No. 2 Lynott & Buffum, 466 ft. from N and E lines of 60-ac. tract in extreme SE part of survey, James Robeson Sur.
Clearing location.
Liberty-Independent Oil Co.'s No. 1 J. M. Neal, 3,550 varas from E line and 505 varas from N line of Samuel Strong Sur.
Drlg. shale 4,110 ft.
A. L. Maxwell's No. 1 M. P. Hinciiff, 300 ft. from E line and 1,000 ft. from the N line of survey, H.&T.C. Sur., Sec. 10s.
Drlg. shale 3,430 ft.
Thomas et al's No. 1-A Eicke, 660 ft. from W line and 2,350 ft. from S line of tract in Green Sur.
T.D. 5,047 ft.; 6⅝-in. csg. at 5,029 ft.
Turnbull & Irwin's No. 1 Cox, 1,000 ft. from the E line and 200 ft. from S line of 108.2-ac. lease, F. J. G. Smiley Sur.
Location

MADISON COUNTY

Madisonville Pet. Co.'s No. 1 Cannon, 660 ft. N of S line, 440 ft. E of W line of 135-ac. tract, J. V. Phillips Sur.
Location.

MATAGORDA COUNTY

Continental Oil Co.'s No. 1 Feife, J. S. Criswell Sur., 3,000 ft. E of W line, 2,800 ft. N of S line of survey.
Location.
Cockburn Oil Co.'s No. 7 Hawkins, 150 ft. NW of No. 6 Hawkins Sur., D. McCarthy Sur.
T.D. 4,811 ft.; stuck drill stem.
Dr. Griffith's No. 1 fee, 3,000 ft. from E line and 3,000 ft. from W line of Wm. H. Bell Sur.
Rig up and S.D.
Horace M. Smith, Inc.'s No. 1 Wadsworth ranch, 150 ft. out of S cor. of Lot No. 3, Blk. S. R. Fisher Sur.
Encountered salt wtr. sand from 6,199-6,224 ft.; T.D. 6,249 ft.

MONTGOMERY COUNTY

Travis Baker et al's No. 1 Foster Estate, 1,200 ft. E of W line and 700 ft. S of N line of Blk. No. 50, J. M. De La Garza Sur.
Derrick.
Charles B. Gohlson's No. 1 Aaron Parks, 250 ft. from S line, 200 ft. from E line of Parks 139-ac. tract, J. Lindley Sur.
Spudded.
P. & C. Oil Co.'s No. 1 G. B. Rosebury, 466 ft. from N and E lines of 160-ac. tract, A. M. Folks Sur.
Location.

Reynolds Drlg. Co. et al's No. 1 Mrs. Clara B. Stewart, 330 ft. S and E of most easterly inner cor. of 595-ac. tract, John Conner Sur.
S.D. 5,500 ft.
Trans State Oil Co.'s No. 1 Foster, 700 ft. E of W line, 3,000 ft. N of S line, Lot 27.
S.D. 4,602 ft.
Woodard-Smith-Cooper's No. 1 J. V. Scott, F. A. B. Wheeler Sur.
T.D. 3,640 ft.; running 5-in. csg. to 3,132 ft.; will perforate from 3,630-35 ft.

ORANGE COUNTY

Blue Line Oil Co.'s No. 1 Godwin, Richard Ballew Sur., 300 ft. from E line and 150 ft. from NE line of Godwin 20-ac. tract.
S.D. 2,770 ft.
Ellis Oil Co.'s No. 1 G. W. Pell, 100 ft. from N and 300 ft. from W line of Pell tract in the J. M. Henerie Sur.
No report.
Dick Schwab's No. 1 East Texas Canal Co., 330 ft. from the N and W lines of 234-ac. tract, John Jett Sur.
Location.

POLK COUNTY

Gulf Prod. Co.'s No. 5 Trinity Co. Lbr. Co., 6,000 ft. from S and 3,000 ft. from W line of O. Peterson Sur.
Location.
Howard Daily et al's No. 1 Z. B. Knox, 1,450 ft. W and 1,920 ft. S of NE cor. of F. Chairs Sur., 16 miles NE of Corrigan.
S.D. 60 ft.
J. F. Anderson's No. 1 E. L. Duke (O.W.D. D.), 400 ft. from E and 350 ft. from S of SW cor. of P. Michelick 50-ac. lease, Abst. 59, P. J. Mineral Sur.
Waiting on a new mud pump; T.D. 5,304 ft.
Humble O. & R. Co.'s No. 1 Texas Long Leaf Lbr. Co., 466 ft. from NE line and 2,250 ft. from the NW line, Sec. 21, A. Viesca Sur.
Moving in rig.
J. W. Leggett et al's No. 1 Bergman, C of 294-ac. tract, or 1,100 ft. W of H.E.&W.T. R.R., J. T. Pinkney Sur.
Rig up.
Dick Schwab's No. 1 Lynch, 330 ft. out of NW cor. of 200-ac. tract in the George Jameson Sur.
Location.
E. A. Thompson's No. 1 Haynes, 990 ft. out of NW cor. of 320-ac. tract and survey, J. Whitmire Sur., E of Leggett.
Drlg. shale 4,210 ft.

REFUGIO COUNTY

Cecil Hagen et al's No. 1 Edith Clarkson, 1,736 ft. from N line, 3,820 ft. from E line of J. Coughlin Sur.
Location.
Magnolia Pet. Co.'s No. 1 Woods, 330 ft. from S and W lines of S. Turner Sur.
Coring shale 5,811 ft.

ROBERTSON COUNTY

H. L. Patton's No. 1 H. Ely, located on a 616-ac. tract, A. Manchola Sur.
Drlg. sand 1,860 ft.

SAN JACINTO COUNTY

Shell Pet. Corp.'s No. 1 K. Moore, 5,400 ft. from W line, 1,250 ft. from S line of lease, T. F. De Rumayor Sur.
Bldg. derrick.
Ralph Sturam et al's No. 1 R. B. Love et al, 475 ft. S of N line and 2,000 ft. W of E line of 177-ac. tract, Drury McGee Sur.
Moving in rig.

TRINITY COUNTY

Gulf Prod. Co.'s No. 1 Trinity Lbr. Co., 4,500 ft. W of E line, 1,200 ft. N of S line of survey, J. M. Gomez Sur.
Location.

VICTORIA COUNTY

Costa Oil Co.'s No. 1 Schovjasa, 330 ft. out of N cor. of Lot No. 14, Wm. Rupley Sur.
Location.
L. A. Gillespie and Superior Oil & Gas Co.'s No. 1 R. W. Brandt, 330 ft. from NE line, 330 ft. from NW line of tract No. 11, Henderson & Pickering Subd., Wm. Rupley Sur.
Cmtd. surface csg.
L. A. Gillespie and Superior Oil & Gas Co.'s No. 1 John Janis, 330 ft. from SW line of survey and on the SE line of Nancy Dean Sur.
Rig up.
Gillespie and Superior O. & G. Co.'s No. 1 Farber, 330 ft. from N and E lines of Lot 6, Nancy Dean Sur.
Prepare to spud.
Magnolia Pet. Co.'s No. 1 Henderson & Pickering, E offset to discovery well, Wm. Rupley Sur.
Moving in material.

WALKER COUNTY

Boone Bros.' No. 1-D Texas Long Leaf Lbr. Co., 330 ft. E and 275 ft. N of SW cor. of 112.6-ac. tract, Mary Milsap Sur.
S.D. 2,126 ft.
S. E. Gray's No. 1 Winzell, 1,200 ft. N and 1,000 ft. E of most southerly S line of survey.
S.D. 4,032 ft.

WASHINGTON COUNTY

Powers Prod. Co.'s No. 1 Boenker, 550 ft. S, 250 ft. W from NW cor. of Dodson 160 acres, J. Newman Sur.
Location.

WHARTON COUNTY

Texas Co.'s No. 2 Pierce Estate, 2,425 ft. S. 31 degrees 20 ft. E, 4,400 ft. N, 68 deg. 40 ft. E from W cor. of Pierce Estate Land, L.&G.N.R.R. Sur. No. 39.
Bldg. derrick.

SOUTH LOUISIANA
ACADIA PARISH

Humble O. & R. Co.'s No. 1 American Rice Mills, 660 ft. S and 1,320 ft. W from NE cor. Sec. 27-10s-1e.
T.D. 9,139 ft.; P.B. to 7,826 ft.; 9⅝-in. csg. cmtd. at 600 ft.

AVOYELLES PARISH

Bell Drlg. Co.'s No. 2 Thompson, 450 ft. S, 360 ft. E, NW cor. NE¼ Sec. 11-2n-5e.
Rig up and S.D.

Southern State Pet. Co.'s No. 1 Boyette, 330 ft. N and 330 ft. E of SW cor. Sec. 23-3n-5e.
S.D. 3,887 ft.

BEAUREGARD PARISH

Chew & Kirby's No. 1 Long Bell Lbr. Co., 330 ft. S and W of C of NE¼ Sec. 26-2s-8w.
Drlg. shale 2,736 ft.
Richardson & Martin's No. 1 Southwest Lbr. Location.

CALCASIEU PARISH

Fred Oil Co.'s No. 2 Faizst, 262 ft. E and 83 ft. S of NW cor. SE¼ Sec. 26-8s-10w.
Drlg. gumbo 2,110 ft.
Fohs Oil Co.'s No. 5 Castle, 660 ft. S. of No. 1 Castle
Drlg. shale 4,650 ft.
Nicholas McCaleb's No. 1 Grey, 2,200 ft. S 1,200 ft. E of NW cor. Sec. 22-8s-12w.
S.D. 850 ft.
Texas Co.'s No. 3 Nickerson, 2,739 ft. N, 3,750 ft. W of SE cor. Sec. 12-19s-8w.
Rig up.
Texas Co.'s No. 2 Nickerson, 2,304 ft. N, 4,322 ft. W of SE cor. NW sec. 12-9s-8w.
Location.
Union Sulphur Co.'s No. 2 Reeves-Mayo.
T.D. 6,727 ft.; 6⅝-in. csg. 6,717 ft.; drlg. plug.
Union Sulphur Co.'s No. 1 Castle, 326 ft. N and E of NW Sec. 13-9s-8w.
P.B. to 4,500 ft.; drlg. shale 4,569 ft.
Union Sulphur Co.'s No. 1 Buhler, 1,465 ft. N and 425 ft. W of SE cor. Sec. 11-9s-8w.
T.D. 7,888 ft.; P.B. 6,427 ft.; drlg. wtr. sand 6,651 ft.
Union Sulphur Co.'s No. 3 Barbe, 396 ft. N and 329 ft. W of SE cor. of NE¼ Sec. 11-9s-8w.
6⅝-in. csg. 6,748 ft.; T.D. 6,756 ft.; I.P. 610 bbls. per day through 16/64-in. choke; tubing pressure 1,100 lbs.
Union Sulphur Co.'s No. 2 Castle, 660 ft. E of No. 1 Castle.
T.D. 6,751 ft.; oil sand; to set 6⅝-in. csg.; I.P. 8 bbls. per hr. through 16/64-in. choke; tubing pressure 2,250 lbs.
Union Sulphur Co.'s No. 1 Reeves-Mayo, 630 ft. NE of discovery.
Temp. abnd. 7,305 ft.
Wheeler Oil Corp.'s No. 1 School Lot, 1,708 ft. E, 1,325 ft. N of SW cor. Sec. 16-9s-7w.
Digging pits.

CAMERON PARISH

Magnolia Pet. Co.'s No. 1 J. B. Broussard, 330 ft. E and S, out of NW cor. of the SW¼ of SE¼ of Sec. 13-12s-9w.
Drlg. shale 4,648 ft.
Steinberger Pet. Co.'s No. 1 Drew, 330 ft. out of NW cor. NE¼ of Sec. 26-10s-11w.
Location.

EAST BATON ROUGE PARISH

Superior Oil & Prod. Co.'s No. 1 Duplanter-Community, 1,500 ft. westerly along the N line from the NE cor. of D. A. and E. A. Duplanter's 130.7-ac. tract, thence 330 ft. at R/A.
Moving in rig.

EAST FELICIANA PARISH

Thompson Creek Oil Co.'s No. 1 Fannie Noland, 2,600 ft. E and 1,580 ft. N of SW cor. Sec. 70.
S.D. 1,480 ft.

EVANGELINE PARISH

Basile's No. 1 Haas, 1,680 ft. S of N line, 350 ft. W of E line of NE cor. Sec. 14-6s-2w.
Rig up.

IBERIA PARISH

Texas Co.'s No. 1 State Fausse Point.
Drlg. shale 2,670 ft.

JEFFERSON PARISH

Lincoln Oil Co.'s No. 1 Rigaud, Sec. 28-21s-25e.
S.D. 7,039 ft.
Texas Co.'s No. 1 Bayou St. Dennis, 20,907 ft. S, 4,853 ft. E of NW cor. of Twp., Sec. 19-17s-24e.
Cored sand showing oil from 9,535-41 ft.; coring ahead.

LAFOURCHE PARISH

Southern Sulphur Corp.'s No. 1 D. L. Lagraize, 800 ft. E of NW cor. of Lot 7, thence 250 ft. S of Sec. 26-21s-22e.
Spudded and shut down.

PLAQUEMINES PARISH

Venice Corp.'s No. 1 Burras.
S.D. 2,119 ft.

RAPIDES PARISH

J. B. Evers' No. 1 G. Wettermark, 540 ft. S and 520 ft. E, NW cor. NE SW Sec. 35-6n-2e.
Location.
Williams-Terrell & Day's No. 1 Armstrong & Murphy, 286 ft. N and 300 ft. W of SE cor. Sec. 24-5n-1w.
S.D. 2,345 ft.

ST. BERNARD PARISH

Danciger's No. 1 Battles, 836 ft. N, 2,198 ft. W of SE cor. Sec. 135-14s-14e.
T.D. 6,001 ft.; drlg. plug.
Emerald Oil Co.'s No. 1 Eugenia Land Co., 1,922 ft. S, 1,720 ft. W of NE cor. Sec. 31-13s-15e.
Moving in rig.

ST. LANDRY PARISH

C. B. Bunte's No. 1 Thistle Waite Lbr. Co., 7,590 ft. W and 1,980 ft. S of NE cor. Sec. 68-5s-4e.
Rig up.

ST. MARTIN PARISH

Texas Co.'s No. 1 State-Plumb Bob, 3,107 ft. E and 2,154 ft. N of SW cor. Sec. 9-8s-7w.
Drlg. shale 7,053 ft.

ST. MARY'S PARISH

Black et al's No. 1 Chetti-Manchis Indian Reservation, 330 ft. out of NE cor. of tract.
Abd. 8,501 ft.

TANGIPOHA PARISH

R. A. Conklin's No. 1 Lake Superior Piling Co., 200 ft. W and N of SE cor. Sec. 19-5s-9e.
Drlg. sand 4,285 ft.

VERMILLION PARISH

Moore Bros.' No. 1 Brussard, 350 ft. S of N line, 250 ft. E of W line, NE cor. Sec. 32-11s-3e.
S.D. 4,056 ft.

Oklahoma Wildcats

(Continued from Page 106)

Sinclair Prairie O. & G. Co.'s No. 1 Corbett, NE NW NE Sec. 17-13-3w.
Drlg. 355 ft.
Slick-Urschel Oil Co. et al's No. 1 Owen, SE cor. Sec. 19-13-3w.
Drlg. 1,000 ft.

OSAGE COUNTY

Peters Pet. Co. and Norbia Oil Co.'s No. 1, SW cor. Sec. 15-25-5.
S.D. at 3,134 ft.

PAWNEE COUNTY

Trees Oil Co.'s No. 1 Susan Wedd, C SE SE Sec. 27-24-6.
Drlg. 1,335 ft.

PAYNE COUNTY

Marathon Oil Co.'s No. 1 Potts, C SW SW Sec. 27-19-2.
Top Arbuckle 5,085 ft.; T.D. 5,116 ft.; P.B. to 4,550 ft.; set 6-in. 4,489 ft.; drilled plug and got wtr.; P.B. to 4,510 ft.; H. F.W.

PITTSBURG COUNTY

McAllister Pet. Corp. et al's No. 1 Chunn, C SE NW Sec. 29-4-14.
T.D. 1,530 ft.; pipe collapsed; S.D.
P. H. Gray et al's No. 1 Lee, NW SE Sec. 12-5-12.
T.D. 1,210 ft.; fishing tools.

PONTOTOC COUNTY

E. M. Blanchard's No. 1 Crabtree, NE SE NE Sec. 27-3-6.
S.D. 2,920 ft.
Philip Boyle's No. 1 McCracken, NE NW NW Sec. 31-5-4.
T.D. 2,170 ft.; to run 7-in. csg.
Charles E. Carter's No. 1 Wood, NW SW SE Sec. 5-4-3.
S.D. 2,070 ft.
L. Cooper's (Crabtree) No. 1 Chandler, NE SE SW Sec. 4-5-6.
Drlg. 1,773 ft.
Continental Oil Co.'s No. 1 McCarty, C SW NW Sec. 12-1-7e.
Location.
Crabb-Craw Oil Co.'s No. 1-A Breco, SE NE SW Sec. 3-4-6.
Sand 1,106-18 ft.; pumped 10 bbls. in 24 hrs.; S.D.
W. A. Delaney et al's No. 1 Fulsome, SE NE Sec. 35-4-6.
Location.
Fleetborn Oil Corp.'s No. 1 Oliver, NE NW SE Sec. 21-4-5.
Bromide 1,895 ft.; sand 2,158 ft.; dry; McLish 2,067 ft.; T.D. 2,229 ft.; dry; P.B. to 1,665 ft.
Mudge O. & G. Co.'s No. 1 Clampett, SW NW NW Sec. 10-2-6.
S.D. 915 ft.
Paramount Oil Co.'s No. 1 Graham, SW SE SW Sec. 13-1-7.
500 ft. wtr. in hole from second Bromide sand at 3,288-98 ft.; top lime 3,357 ft.; sand 3,405-08 ft.; sand 3,473-78 ft.; H.F. W.; S.D.
Gillette & Kroeger's No. 1 Robbins, NE SE Sec. 31-1-4.
Machine.
Gillette & Kroeger's No. 1 Duver, NW SE Sec. 36-1n-6e.
Drlg. 1,292 ft.
Southern Oil Co.'s No. 1 Walker, NW NW SW Sec. 11-4-6.
T.D. 1,275 ft.; caving; P.B. to 1,175 ft. and pumped 20 bbls. oil in 12 hrs.

POTTAWATOMIE COUNTY

C. W. James et al's No. 1 Neal, C NW SE SW Sec. 4-5-3.
Wilcox 4,175-4,212 ft., T.D.; H.F.W.; P.B. to 2,739 ft. and ripped 8-in. csg. 2,690-2,700 ft.; H.F.W.; P.B. and swbd. 80 bbls. of oil in 5 hrs. at 2,690 ft.; recmtng. off wtr.
Howard Sherman et al's No. 1 Wingo, NE NW SE Sec. 32-10-5.
Simpson Dolomite 4,340 ft.; T.D. 4,361 ft.; good show oil; sandy Dolomite 4,367 ft.; drlg. 4,369 ft.; show oil.

PUSHMATAHA COUNTY

Wm. Ungerman et al's No. 1 Misser, SE SW SW Sec. 35-3s-18.
T.D. 2,950 ft.; to rerun 6-in. csg.

SEMINOLE COUNTY

Ray Dorris and J. T. Hall's No. 1 Dorris, SE SE SW Sec. 31-10-7.
Sand 520-60 ft.; H.F.W.; S.D. 608 ft.
Verser & Clay et al's No. 1 Thomas, NE SE NW Sec. 1-6-6.
S.D. at 2,802 ft.
Wofford Drlg. Co. et al's No. 1 Abbott, NE cor. Sec. 33-8-7.
Rig only.
Wofford Drlg. Co. et al's No. 1 Thomas, NW SE Sec. 8-6-7.
Wilcox 3,945-47 ft., T.D.; flowed 245 bbls. oil in 24 hrs.; D.D. to 3,950 ft.; flowed 655 bbls. oil by heads in 12 hrs.; comp.

TEXAS COUNTY (PANHANDLE)

Ben F. Ash et al's No. 1 Guymon Townsite, C NE SE Sec. 30-3n-15e; (Cimarron Meridian).
T.D. 2,420 ft.; fishing for drill pipe; rig blown down.

WASHITA COUNTY

Okla.-Midwestern Oil Co.'s No. 1 Dock, SW cor. Sec. 21-8-18w.
T.D. 2,430 ft.; lost tools in hole; rig rebuilt; S.D.
Anadarko Basin Oil Co.'s No. 1 Wolf, NE SW Sec. 23-9-17w.
Rigged up and S.D.
L. P. McWhirter's No. 1 fee, SW cor. Sec. 34-8n-19w.
Drlg. 288 ft.

SOUTHERN OKLAHOMA
ATOKA COUNTY

Keaton et al's (Brookshire) No. 1 Rowland, NW NE NE Sec. 18-3-10.
H.F.W. 3,844 ft.; P.B. 757 ft.; treated with acid.
Clark et al's No. 1 Morrison, SE cor. Sec. 32-1-14.
Drlg. 200 ft.

Malernee et al's No. 1 D. O. K. Land Co., C SE SE Sec. 36-2s-13.
S.D. 3,115 ft.
H. W. Sears et al's No. 1 Downing, SE NW Sec. 17-1s-14.
Moving in tools.

BRYAN COUNTY

C. B. Welch's No. 1 Collins, NE NE Sec. 19-1s-8e.
T.D. 570 ft.; U.R. 8-in. csg.
Trio Oil Co.'s No. 1 Gilbert, SW NE SW Sec. 25-8s-7.
Show oil 494-97 ft.; drlg. 521 ft.

CARTER COUNTY

Waco Turner's No. 1 Munson, NE NW NE Sec. 35-5s-2w.
Top lime 2,610 ft.; drlg. lime 2,640 ft.
Carter Oil Co.'s No. 1 Carter-Williams, SW NE SW Sec. 27-2s-3w (7,000-ft. test).
Drlg. lime 5,165 ft.

CHOCTAW COUNTY

Burns et al's No. 1 Hallum, NE NW NW Sec. 4-7s-20.
Rigging up.

COMANCHE COUNTY

H. W. Baker's No. 1 Miller, SE SW SE NE Sec. 22-2-13w.
S.D. 120 ft.
Oscar Jones' No. 1-A Sheets, NE SW Sec. 26-3-10w.
Machine.
Henry Rosenthal et al's No. 1 Au-che-re-ah, NW NW NW Sec. 5-1n-9w.
Drlg. 2,140 ft.
F. F. Stevens' No. 1 Green, SE SW Sec. 2-1-13w.
Drlg. lime 1,530 ft.
Heiden & Taylor's No. 2 Crutcher, C NE Sec. 11-1n-12w.
S.D. at 860 ft.

HARMON COUNTY

Jud Leath et al's No. 1 McConnell, NW cor. Sec. 22-3-34w.
Spudded and S.D.

GREER COUNTY

D. E. Whatley et al's No. 1 Hamilton, NW SE Sec. 25-4-24w.
Cellar.

JACKSON COUNTY

Associated Oil Co.'s No. 1 Harrell, NE SW Sec. 13-1-21w.
T.D. 1,240 ft.; S.D.
J. G. Buel et al's No. 1 Kizziar, SE SE NE Sec. 2-2n-22w.
T.D. 1,740 ft.; drlg. on lugs.
Burke-Greis Oil Co.'s No. 1 Millbrant, SW NW SW Sec. 31-3-19w.
Location.
Burk Royalty Co.'s No. 1 Gore, SE NW SE Sec. 3-1s-20w.
S.D. at 1,909 ft.
A. H. Emenheiser's No. 1 Morrell, SE SW SE Sec. 17-3n-21w.
S.D. 910 ft.
Golden & Cochran's No. 1 Duncan, NE cor. Sec. 34-2n-21w.
Granite wash 1,990-95 ft.; dry; drlg. 2,475 ft.
Gypsy Oil Co.'s No. 1 Boucher, NW SW SW Sec. 32-1-19w.
Granite wash 1,129-43 ft.; dry; drlg. dry granite wash 1,582 ft.
Gypsy Oil Co.'s No. 1 Stokes, SE NW SW Sec. 11-1-20w.
Lime 1,709-11 ft.; T.D. 1,722 ft.; S.D.
Jack Kilgore's No. 1 Wooldridge, SW SW NE Sec. 15-3n-21w.
Drlg. dry granite wash 2,257 ft.
Loper et al's No. 1 Conrad, NE cor. Sec. 35-1s-19w.
S.D. at 1,320 ft.
Marshall & Burnham's No. 1 Hess, NE SW NE Sec. 27-1s-20w.
Drlg. 690 ft.
Palo Duro Oil Co.'s No. 1 Ealum, SW SW SE Sec. 16-2-21w.
Drlg. 1,025 ft.; (corrected).
Triangle Oil Co.'s No. 1 Fox, E½ W½ NW Sec. 11-3n-20w.
T.D. 600 ft.; fishing tools.
Whatley & Whatley's No. 1 Holt, NW SW SE Sec. 20-1n-20w.
S.D. 1,430 ft.

JEFFERSON COUNTY

Gypsy Oil Co.'s No. 1 James, SW SE SE Sec. 30-6s-6w.
Drlg. shale 1,005 ft.

JOHNSTON COUNTY

W. A. Delaney et al's No. 1 Diamond, NW NE SE Sec. 5-1s-8.
Drlg. 2,100 ft.

LOVE COUNTY

Amerada and Stanolind's No. 1 W. & D., NW SE SE Sec. 27-6s-2e.
T.D. 1,872 ft.; crooked hole; may skid rig for new hole.

MARSHALL COUNTY

Jess Cook et al's No. 1 May, NE NW Sec. 12-8s-5.
Drlg. 75 ft.
Paul Robb's No. 1 Vittetoe, C NE SE Sec. 11-5s-4e.
Top Sylvan shale 5,405 ft.; T.D. 5,461 ft.; S.D.

McCURTAIN COUNTY

J. V. Scrivener et al's No. 1, NE SW SW Sec. 24-6s-21.
Drlg. 872 ft.

MURRAY COUNTY

Equitable O. & G. Co.'s No. 1 Baer, SW NW NW Sec. 21-1s-3e.
S.D. at 1,250 ft.
Equitable O. & G. Co.'s No. 1 Ferguson, NE NE SW Sec. 36-1s-2.
Sylvan shale 223 ft.; fishing at 435 ft.

STEPHENS COUNTY

Wm. Angle et al's No. 1 Cooper, NE NW NW Sec. 23-2-7w.
T.D. 3,406 ft.; shut down.
J. W. Madison's No. 1 Tussey, SW SE NW Sec. 24-1n-4w.
Rig down; drill pipe in hole; T.D. 3,220 ft.

TILLMAN COUNTY

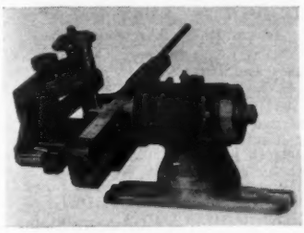
J. G. Buell et al's No. 1 Haught, SE NE Sec. 22-1-16w.
Drlg. 828 ft.
Cockburn & Boose's No. 1 Nichols, SE cor. Sec. 28-2s-19w.
T.D. 1,394 ft.; fishing tools.

NEW AND IMPROVED EQUIPMENT

Attachment Grinds Throat or Chamfer on Tap Chaser

For regrinding the throat or chamfer on Landis collapsible tap chasers the Landis Machine Co., Waynesboro, Pa., has placed on the market the tap chaser throat-grinding attachment illustrated.

It is vitally important that the throat on all the chasers in a set be uniformly ground to exactly the same degree and length. If this is not done the chasers will not cut uniformly, but part of the set must take the entire burden of cut-



ting the thread. The throat on tap chasers should never be ground by free hand.

The base of the Landis tap chaser throat-grinding attachment is arranged for bolting to the table of most standard makes of tool and cutter grinding machines. Attached to the base is a swivel base which carries the spindle, to which is attached the vise base for holding the chasers. The vise base is adjustable for setting the chasers on a radius corresponding with that of the thread which they are to cut. It is graduated for diameters from 1 to 13½ inches, and it is fitted with a micrometer for obtaining the desired amount of radial clearance with which the chasers should be ground.

The vise base is provided with a milled flat which will accommodate all sizes of tap chasers manufactured by the Landis Machine Co. The individual chasers are held by an adjustable clamp and locked with a hand screw. The vise base rotates with the spindle, which is fitted in a capped bearing, to provide an oscillating movement for grinding the chaser against the face of a cup-shaped wheel. To facilitate this movement a handle is fitted to the vise base. This motion will produce a radial clearance on the chaser throat.

The attachment is suitable for grinding all sizes of chasers used in Landis style LT and style LM taps as well as chasers used in the Victor collapsible taps previously manufactured by the Landis Machine Co. up to and including 12-inch.

Larkin Finishes 30 Years of Business in Oil Fields

The Larkin Packing Co., St. Louis, Mo., is observing its thirtieth anniversary this year. The company started manufacturing packers in 1905; clamps, casing and anchor in 1913; casing shoes in 1915 and swaged nipples and bull plugs in 1929. Examination of its books reveals that in its 30 years of steady growth the company has sold 11,311,774 pieces of equipment. It has warehouse stocks in Tulsa, East Texas and Houston, and its products are carried by supply stores throughout the various oil fields.

Rudolf E. Schiefelbein has taken over the representation in Southwest Texas of all Kibele Manufacturing Co. lines, with headquarters in the building formerly occupied by the Kibele Co. at 201 East Cevallos Street, San Antonio, before it removed its manufacturing plant and offices to Dallas last January. Associated with Mr. Schiefelbein is Alfred Brown.

Notes About Trade Literature

Among live articles in the April number of the Water Tower, published by the Chicago Bridge and Iron Works, 37 West Van Buren Street, Chicago, is one on a radial cone tank installation for storing casinghead gasoline.

—

The difference between Beaver cam-type threaders and "taper-pin" type threaders is explained in a folder distributed by Beaver Pipe Tools, Inc., Warren, Ohio.

—

Handy Flux, a new flux for low-temperature brazing is described in Bulletin No. 9, which Handy & Harman, 82 Fulton Street, New York, send on request.

—

A 12-page bulletin issued by Byron Jackson Co., Los Angeles, Calif., gives detailed information concerning incline and vertical mine pumps, adaptable also as booster pumps.

—

A condensed catalog illustrating and describing the complete line of "Caterpillar" track-type tractors, blade graders, elevating graders, road maintenance machines, terraces, power units and industrial engines has been issued by Caterpillar Tractor Co. of Peoria, Ill.

—

An eight page catalog covering general specifications for a line of horizontal return tubular boilers built by Combustion Engineering Co., Inc., 200 Madison Avenue, New York, is obtainable from that company. These boilers formerly were known to the trade under the names of Casey-Hedges and Walsh-Weidner.

Condensate units are covered by bulletin 260-B14 just issued by Roots-Connersville Blower Corp., Connersville, Ind. These units for heating systems and boiler-feed service, are built in sizes from 2,000 to 70,000 square feet of radiation.

—

Wilson & Bennett Manufacturing Co., with factories in Chicago, Jersey City, and New Orleans, is distributing a 128-page catalog showing its line of the steel pails, barrels, and drums of one-half to 65 gallon sizes that they manufacture.

—

A folder issued by the B. F. Goodrich Co., Akron, Ohio, lists 14 improvements in belt construction effected during the past five years. Six are in manufacturing process, four in fabric used, four in rubber compounds.

—

A helpful article on the care of wire rope is among those in the current number of the Yellow Strand, published by the Broderick & Bascom Rope Co., St. Louis, Mo.

—

A new technical bulletin, No. 40L, dealing with crankcase analyses and deductions relative to sludging, is obtainable from Acheson Colloids Corp., Port Huron, Mich.

—

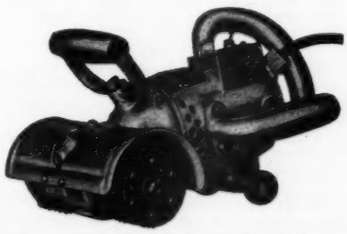
Advantages of Brown potentiometer pyrometers are discussed in a folder prepared by the Brown Instrument Co., Philadelphia, Pa.

—

"Peerless Weatherproof Wires and Cables" is the subject of a new bulletin obtainable from the General Cable Corp., 420 Lexington Avenue, New York.

Large and More Powerful Cleaning Tool Introduced

A larger and more powerful tool is announced by the Berg Cleaning Tool Division of the Concrete Surfacing Ma-



chinery Co., Cincinnati, Ohio. The new model M removes heavy rust, scale and foreign accumulations. It cleans the surface and all pitted cavities, leaving the surface in condition for the adhesion of new paint to insure a lasting paint job.

The tool gives 115,000 impacts per minute of 72 loose cutters mounted into cutter bundles, thrown out by centrifugal force, to accomplish the cleaning results. The degree of impact is regulated by a depth shoe, easily adjusted.

The electric model M illustrated is equipped with a General Electric one-half horsepower Universal motor, new grease seal type ball bearings throughout and the latest other electrical tool accessories. Oil refiners, pipe manufacturers, tank manufacturers, power and light companies and equipment companies should be interested in this device.

New Line of Compressors Has Distinctive Features

Available in sizes ranging from 113 to 194 cubic feet per minute displacements, a new line of 3-cylinder air compressors, known as WBR is announced by the Gardner-Denver Co., Quincy, Ill. These compressors, part of the complete WB line, combine unusual features designed to increase their efficiency and value.

One feature is the use of two small low-pressure cylinders, instead of one large one, resulting in lower air temperature with corresponding saving in horsepower. Cylinder wals are water-cooled to provide lower wall temperature with better lubrication and longer life. The two-stage construction, with water-cooled cylinders and intercooler is designed to assure sustained high efficiency.

A forcefeed pressure lubrication system is used, oil being delivered to the bearings by a plunger pump. Pistons and cylinder walls are lubricated by the oil spray of the crankpin. The compressor may be run in either direction.

The main bearings are of the Timken heavy-duty, tapered roller type. This use of roller bearings according to the maker decreases the distance of the center of the main bearings to the center of the crankpin, making possible the use of the most compact and rigid crankshaft. The crankshaft itself is of chrome-nickel-molybdenum alloy, ground to size and accurately counterweighed for best running balance.

Men Well Known in the Equipment Field

J. R. (Jimmy) McCrea has joined the sales force of the Hazard Wire Rope Co. covering the Oklahoma territory. After going to the Mid-Continent area from

J. R. McCREA

Wyoming, Mr. McCrea spent several years with the A. O. Smith Corp. and The Pittsburgh Equitable Meter Co., Merco Nordstrom Valve Co. He was with the International Supply Co. in Dallas, Tex., prior to his affiliation with Hazard.

Mr. McCrea will work out of the Fort Worth District office but live in Tulsa, where The Bovaird Supply Co., distributor in Oklahoma for Hazard Wire Rope Co. has its headquarters.

He succeeds Clyde Troutman who has been transferred to the Kansas territory with headquarters in Wichita.

New Multi-Seal Rivet Has Many Uses in Repair Work

The new Multi-Seal rivet fastens sheet metal together and may be applied from one side of the job. Its uses include repairing holes, cracks, leaky rivets or securing patches on oil reservoirs, air containers, water or steam tanks. The rivet forms three seals that will withstand 2,000 pounds pressure. It has a fusing point of 900 degrees.

The rivet is constructed of a strong ductile material which expands as the hexagon nut is drawn down and the ferule on the tip of the rivet flattens, compressing a metal head on the inside of the container. The rivets are made in three sizes and may be used also as anchor bolts for securing cabinets, machinery or other equipment to stone, cement or brick. They are manufactured by Multi-Seal Manufacturing Co., P. O. Box 3900, Chicago.

The Foxboro Co., Foxboro, Mass., has been appointed sole distributor of "Commercial" orifice fittings, made by the Commercial Iron Works of Los Angeles, Calif. It is believed the trained engineering service offered by the Foxboro Co. will aid users to apply the fittings more successfully.

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Sell in the most active area in the United States—The Permian Basin of West Texas and Southeastern New Mexico. From the standpoint of royalty investors this area has much to offer. Can supply you with choice non-producing royalties located on geophysical highs. Also drilling blocks, close in acreage to production, or wildcat leases. I maintain my own field men who cover this area for me. Complete set of Forms and Reports for filing with Securities and Exchange Commission accompanies every order. Inquiries invited.
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Income Producing Royalties
For
DEALERS AND TRUSTS.
PETROLEUM PURCHASING CORP.
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I OWN and will sell the best producing royalties in Van, East Texas and Wheeler County, Texas, Fields. I own 500 acres full one-eighth land owners' royalty participating in rentals under major companies. Heavy development under way. $4.00 an acre, rentals paying 6¼% interest in advance. Will buy royalties in Texas and Oklahoma in any amounts. P. R. KNICKERBOCKER, 3237 Westminster St., Dallas, Texas.

Leases—Production

WANTED
Drilling deals, portable, rotary, and cable tools. The Green Oil Company, First National Bank Bldg., Albuquerque, New Mexico.

BARTON ARCH territory of Western Kansas. Cos. wanting protection should write to J. E. Leader, Wakeeney, Kansas.

WANTED—One or two producing oil wells, about 50 bbls. Cash. Box 14, Pomona, California.

HAVE in Kentucky several undrilled and untested structures leased for oil and gas. Can get big production. People wanting to develop write me. F. L. JAMES, Box 214, Albany, Ky.

ORDOVICIAN West Texas test and several Woodbine sand and Gulf Coast wildcats now under way where you stand chance to win 10 to 50 for one. Leases, Royalties. E. CROFT, Proctor, Texas.

FOR SALE: Oil Leases and royalties in Lea and Roosevelt Cos., N. Mex., and Andrews, Gaines and Yoakum Cos., Tex. Write J. W. Wallrich, Lovington, N. M.

PRODUCING forty acre lease, one well, fully equipped, Pottawatomie County, Okla. For Sale, bargain. O. B. Askins, 534 Com. Exch. Bldg., Oklahoma City, Oklahoma.

NEW MEXICO—My weekly scout report furnishes complete and reliable information on New Mexico developments. Send for copy. W. S. Patterson, Santa Fe, N. Mex.

NEW MEXICO Oil and Gas Leases and royalties. Send 50 cents in stamps for new State Oil Map of New Mexico. Roy G. Barton, Clovis, New Mexico.

FOR SALE
Oil leases and royalties near drilling wells, on good geology in the Permian Basin of West Texas. Jas. E. Robinson, San Angelo, Texas.

FOR LEASE by owner, 512 acres Southern Victoria County.
H. B. STUBBLEFIELD,
Bloomington, Texas.

10 YEAR oil and gas lease on twenty-four sections or any part from 160 acres up at $2.50 per acre; 50c rental. This acreage is well located in West Texas Permian basin, Ector County. Large company holdings east and west adjoining this block. R. K. Ferguson, Box 32, Odessa, Texas.

Leases—Production

BUY OIL LEASES ahead of drill, 75c acre up. Joiner interests and others here. Active drilling. 1934 cheap leases soon advanced to hundreds of dollars per acre. Around twenty new oil pools. References. E. M. ADAMS, Clarksville, Texas.

HOBBS POOL, LEA COUNTY, N. M., is developing into one of the world's largest oil fields. We specialize in leases and royalties. Reliable information on field development furnished free. SOUTHWESTERN INVESTMENT CO., Bob Childers, Manager, Hobbs, New Mexico.

Tex. Okla. royalty, leases, bought, sold, promptly, wholesale, retail. J. H. Smith, 204 Isham Bldg., Longview, Tex.

TREGO and Graham Co., Kansas, oil leases and Royalties, at very low prices. J. E. LEADER, Wakeeney, Kansas.

WILL furnish maps and information and can provide acreage to anyone willing undertake drilling wildcat fields in Saskatchewan. We pioneered these fields and have results of five years' survey work available for right parties willing to do test drilling. PETROLEUM ENGINEERING COMPANY, LTD., 301 Great West Permanent Building, WINNIPEG, Manitoba, Canada.

Patent Attorneys

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Before disclosing your invention to anyone, send for blank form:
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Instructions "How to Establish Your Rights" and complete information FREE!
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JAMES E. MILLER CO., 207½ E. Third St., Tulsa, Okla., will co-operate with responsible parties seeking aid in financing projects of higher order.

PROSPECTUSES prepared and deals shaped up for registration or exemption under Federal Security Act. Fee basis. John Morris, Seventh Floor, 1237 Market St., Philadelphia, Pa.

MILLER, 207½ E. Third St., Tulsa, Okla. Prospectous preparation and presentation. General assistance in all marketable matters. Correspondence invited.

For Sale—Maps

OIL MAPS
The best ownership and general-area maps, large or small scale found in the oil industry; cover any active County or Parish or "hot spot" in Texas or Louisiana.
W. W. Zingery, Houston, Tex.
The World's Best Oil Map Maker.

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Have lease option, mining prop., Silver 200 oz. to the ton, tunneling 200 ft., ore in sight. Sell int. INTERESTED? Write. Sutton, 1270 Downing St., Denver, Colo.

Testing Service

GAS TESTING
Field tests for gasoline content, orifice meters tested, chart computations.
OKLA. METER & GAS TESTING CO.
922 Kennedy Bldg., Tulsa.

Canadian Fields

(Continued from Page 111)

Dalhousie Oil Co. of Calgary, Imperial subsidiary, sold 3,383 bbls. of crude and 6,253 bbls. of discolored naphtha in 1934, additional revenues being secured by the processing of tail gas in the Royalite absorption plant.

Tentative arrangements have been made for the sale by Spooner Oils, Ltd., of its holdings and producing wells in the north central Turner Valley area to Royalite Oil Co. in exchange for 8,300 shares of Royalite stock.

Aldersyde Structure

On the Aldersyde structure, east of Turner Valley, Ranchmen's Gas & Oil Co.'s No. 1, LSD 16, Section 13-20-28w4, is below 6,300 feet and preparing for a production test. The well has a fair gas flow and recently encountered a change in formation with shows of a slightly heavier crude. The gas flow is about 4,000,000 feet a day. Farther south and west on the same structure, Globe Royalties' No. 1, LSD 3, Section 2-20-29w4, is moving outfit to location.

Admiral Oils, Ltd., of Calgary is planning to drill on its Aldersyde acreage if Ranchmen's No. 1 develops commercial production. Officers of the Admiral company are: President, F. L. Shouldice; vice president, Dr. L. A. Maxwell; managing director, N. J. Maxwell; director, D. C. Howland; director and secretary, G. D. McEwen.

Tests in the Foothills

In the forest reserve area 65 miles west of Olds, Hunter Valley Oil Co.'s No. 1 McLaren, LSD 12, Section 13-31-10w5, is cleaning out preparatory to resuming from 4,814 feet after winter.

On the Watson structure, north and west of Lundbreck, Mar Jon Oil Co.'s No. 3, LSD 3, Section 4-10-2w5, is below 1,285 feet after encountering a fair show of high grade crude at 1,110 feet.

In the old Oil City Field, Waterton Lakes Park, Oil City Royalties' No. 1, Section 30-1-30w4 is hauling fuel and preparing to resume from 2,160 feet after winter.

Border Fields

On the Del Bonita structure, Terminal Oil Co.'s No. 1, NE Section 18-1-21w4, is in the Milk River sand below 2,275 feet. S. M. Zandmer of Los Angeles is in charge.